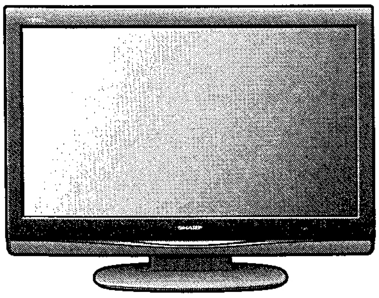
LC32D44E/S/RU-BK/GY (1st Eddition)

SHARP SERVICE MANUAL

No. S38F8LC32D44E



LCD COLOUR TELEVISION

MODELS LC-32D44E/S/RU-BK/GY

In the interests of user-safety (Required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified should be used.

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Parts Guide

Parts marked with "⚠" are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

SHARP CORPORATION

This document has been published to be used for after sales service only.
The contents are subject to change without notice.

SAFETY PRECAUTION

IMPORTANT SERVICE SAFETY PRECAUTION

- **Service work should be performed only by qualified service technicians who are thoroughly familiar with all safety checks and the** servicing guidelines which follow:

■ WARNING

1. For continued safety, no modification of any circuit should be attempted.
2. Disconnect AC power before servicing.

CAUTION: FOR CONTINUED PROTECTION AGAINST A RISK OF FIRE REPLACE ONLY WITH SAME TYPE FUSE.

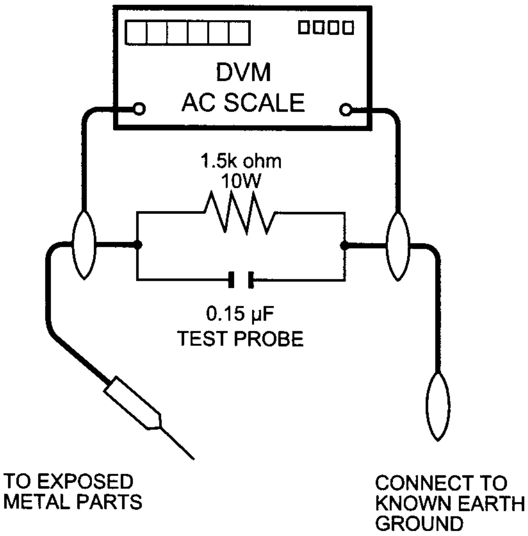
F7101, F7103 (250V 3.15A)
F7102 (250V 1A)

■ BEFORE RETURNING THE RECEIVER (Fire & Shock Hazard)

Before returning the receiver to the user, perform the following safety checks:

3. Inspect all lead dress to make certain that leads are not pinched, and check that hardware is not lodged between the chassis and other metal parts in the receiver.
4. Inspect all protective devices such as non-metallic control knobs, insulation materials, cabinet backs, adjustment and compartment covers or shields, isolation resistor-capacitor networks, mechanical insulators, etc.
5. To be sure that no shock hazard exists, check for leakage current in the following manner.

- Plug the AC cord directly into a 220~240 volt AC outlet.
- Using two clip leads, connect a 1.5k ohm, 10 watt resistor paralleled by a 0.15μF capacitor in series with all exposed metal cabinet parts and a known earth ground, such as electrical conduit or electrical ground connected to an earth ground.
- Use an AC voltmeter having with 5000 ohm per volt, or higher, sensitivity or measure the AC voltage drop across the resistor.
- Connect the resistor connection to all exposed metal parts having a return to the chassis (antenna, metal cabinet, screw heads, knobs and control shafts, escutcheon, etc.) and measure the AC voltage drop across the resistor.
  All checks must be repeated with the AC cord plug connection reversed. (If necessary, a nonpolarized adaptor plug must be used only for the purpose of completing these checks.)
  Any reading of 1.05 V peak (this corresponds to 0.7 mA peak AC.) or more is excessive and indicates a potential shock hazard which must be corrected before returning the monitor to the owner.



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SAFETY NOTICE

Many electrical and mechanical parts in LCD color television have special safety-related characteristics.

These characteristics are often not evident from visual inspection, nor can protection afforded by them be necessarily increased by using replacement components rated for higher voltage, wattage, etc.

Replacement parts which have these special safety characteristics are identified in this manual; electrical components having such features are identified by "⚠" and shaded areas in the Replacement Parts List and Schematic Diagrams.

For continued protection, replacement parts must be identical to those used in the original circuit.

The use of a substitute replacement parts which do not have the same safety characteristics as the factory recommended replacement parts shown in this service manual, may create shock, fire or other hazards.

//

PRECAUTIONS A PRENDRE LORS DE LA REPARATION

■ **Ne peut effectuer la réparation qu' un technicien spécialisé qui s'est parfaitement accoutumé à toute vérification de sécurité et aux conseils suivants.**

■ AVERTISSEMENT

1. N'entreprendre aucune modification de tout circuit. C'est dangereux.
2. Débrancher le récepteur avant toute réparation.

PRECAUTION: POUR LA PROTECTION CONTINUE CONTRE LES RISQUES D'INCENDIE, REMPLACER LE FUSIBLE

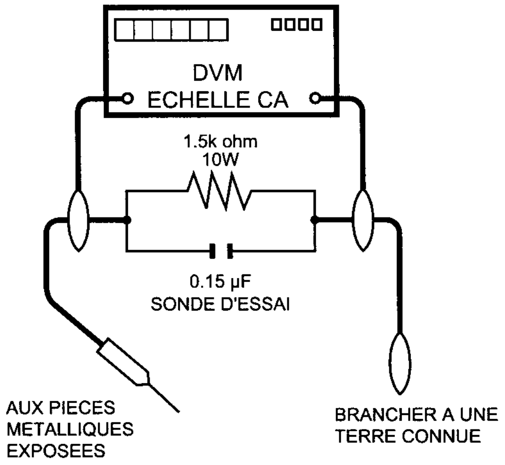
F7101, F7103 (250V 3.15A)
F7102 (250V 1A)

■ VERIFICATIONS CONTRE L'INCEN-DIE ET LE CHOC ELECTRIQUE

Avant de rendre le récepteur à l'utilisateur, effectuer les vérifications suivantes.

3. Inspecter tous les faisceaux de câbles pour s'assurer que les fils ne soient pas pincés ou qu'un outil ne soit pas placé entre le châssis et les autres pièces métalliques du récepteur.
4. Inspecter tous les dispositifs de protection comme les boutons de commande non-métalliques, les isolants, le dos du coffret, les couvercles ou blindages de réglage et de compartiment, les réseaux de résistancecapacité, les isolateurs mécaniques, etc.
5. S'assurer qu'il n'y ait pas de danger d'électrocution en vérifiant la fuite de courant, de la facon suivante:

- Brancher le cordon d'alimentation directem-ent à une prise de courant de 120V. (Ne pas utiliser de transformateur d'isolation pour cet essai).
- A l'aide de deux fils à pinces, brancher une résistance de 1.5 kΩ 10 watts en parallèle avec un condensateur de 0.15μF en série avec toutes les pièces métalliques exposées du coffret et une terre connue comme une conduite électrique ou une prise de terre branchée à la terre.
- Utiliser un voltmètre CA d'une sensibilité d'au moins 5000Ω/V pour mesurer la chute de tension en travers de la résistance.
- Toucher avec la sonde d'essai les pièces métalliques exposées qui présentent une voie de retour au châssis (antenne, coffret métallique, tête des vis, arbres de commande et des boutons, écusson, etc.) et mesurer la chute de tension CA en-travers de la résistance.
  Toutes les vérifications doivent être refaites après avoir inversé la fiche du cordon d'alimentation. (Si nécessaire, une prise d'adpatation non polarisée peut être utilisée dans le but de terminer ces vérifications.)
  La tension de pointe mesurée ne doit pas dépasser 0.75V (correspondante au courant CA de pointe de 0.5mA).
  Dans le cas contraire, il y a une possibilité de choc électrique qui doit être supprimée avant de rendre le récepteur au client.



AVIS POUR LA SECURITE

De nombreuses pièces, électriques et mécaniques, dans les téléviseur ACL présentent des caractéristiques spéciales relatives à la sécurité, qui ne sont souvent pas évidentes à vue. Le degré de protection ne peut pas être nécessairement augmentée en utilisant des pièces de remplacement étalonnées pour haute tension, puissance, etc.
Les pièces de remplacement qui présentent ces caractéristiques sont identifiées dans ce manuel; les pièces électriques qui présentent ces particularités sont identifiées par la marque "⚠" et hachurées dans la liste des pièces de remplacement et les diagrammes schématiques.
Pour assurer la protection, ces pièces doivent être identiques à celles utilisées dans le circuit d'origine. L'utilisation de pièces qui n'ont pas les mêmes caractéristiques que les pièces recommandées par l'usine, indiquées dans ce manuel, peut provoquer des électrocutions, incendies, radiations X ou autres accidents.

PRECAUTIONS FOR USING LEAD-FREE SOLDER

■Employing lead-free solder

- "PWBs" of this model employs lead-free solder. The LF symbol indicates lead-free solder, and is attached on the PWBs and service manuals. The alphabetical character following LF shows the type of lead-free solder.

  Example:

LF a	**LF** a/a
Sn-Ag-Cu	Sn-Ag-Cu
Indicates lead-free solder of tin, silver and copper.	Indicates lead-free solder of tin, silver and copper.

■Using lead-free wire solder

- When fixing the PWB soldered with the lead-free solder, apply lead-free wire solder. Repairing with conventional lead wire solder may cause damage or accident due to cracks.

  As the melting point of lead-free solder (Sn-Ag-Cu) is higher than the lead wire solder by 40 °C, we recommend you to use a dedicated soldering bit, if you are not familiar with how to obtain lead-free wire solder or soldering bit, contact our service station or service branch in your area.

■Soldering

- As the melting point of lead-free solder (Sn-Ag-Cu) is about 220 °C which is higher than the conventional lead solder by 40 °C, and as it has poor solder wettability, you may be apt to keep the soldering bit in contact with the PWB for extended period of time. However, Since the land may be peeled off or the maximum heat-resistance temperature of parts may be exceeded, remove the bit from the PWB as soon as you confirm the steady soldering condition.

  Lead-free solder contains more tin, and the end of the soldering bit may be easily corroded. Make sure to turn on and off the power of the bit as required.

  If a different type of solder stays on the tip of the soldering bit, it is alloyed with lead-free solder. Clean the bit after every use of it.

  When the tip of the soldering bit is blackened during use, file it with steel wool or fine sandpaper.

- Be careful when replacing parts with polarity indication on the PWB silk.

Lead-free wire solder for servicing

PARTS CODE	PRICE RANK	PART DELIVERY	DESCRIPTION
ZHNDAi123250E	BL	J	ϕ0.3mm 250g (1roll)
ZHNDAi126500E	BK	J	ϕ0.6mm 500g (1roll)
ZHNDAi12801KE	BM	J	ϕ1.0mm 1kg (1roll)

CHAPTER 1. SPECIFICATIONS

[1] SPECIFICATIONS

Item			**32" LCD COLOUR TV**
LCD panel			32" Advanced Super View & BLACK TFT LCD
Resolution			1,049,088 pixels (1,366 x 768)
Video Colour System			PAL/SECAM/NTSC 3.58/NTSC 4.43/PAL 60
TV Function	TV-Standard	Analogue	CCIR (B/G, I, D/K, L, L’)
		Digital	DVB-T (2K/8K OFDM)
	Receiving Channel	VHF/UHF	E2-E69ch, F2-F10ch, I21-I69ch, IR A-IR Jch, (Digital: E5-E69ch)
		CATV	Hyper-band, S1-S41ch
	TV-Tuning System		Auto Preset 99 ch, Auto Label, Auto Sort
	STEREO/BILINGUAL		NICAM/A2
Brightness			450 cd/m2
Viewing angles			H : 176° V : 176°
Audio amplifier			10W x 2
Speaker			(100 mm x 35 mm) x 2
Terminals	Antenna		UHF/VHF 75Ω Din type (Analogue & Digital)
	RS-232C		9 pin mini D-sub
	EXT 1		SCART (AV input, Y/C input, RGB input, TV output)
	EXT 2		SCART (AV input/output, Y/C input, RGB input, AV Link)
	EXT 3		S-VIDEO (Y/C input), RCA pin (AV input)
	EXT 4		Ø 3.5 mm jack (Audio input), 15 pin mini D-sub (PC)
	EXT 5		Audio in, Component in
	EXT 6		HDMI, Ø 3.5 mm jack (Audio input)
	EXT 7		HDMI
	C. I. (Common Interface)		EN50221, R206001
	OUTPUT		RCA pin (Audio)
	Headphones		Ø 3.5 mm jack (Audio output)
OSD language			English/German/French/Italian/Spanish/Dutch/Swedish/Portuguese/Finnish/Turkish/Greek/ Russian/Polish
Power Requirement			AC 220-240 V, 50 Hz
Power Consumption			120 W (0.9 W Standby) (Method IEC60107)
Weight			11.0 kg (Display only), 13.0 kg (Display with stand)
Operating temperature			0°C to +40°C

- As a part of policy of continuous improvement, SHARP reserves the right to make design and specification changes for product improvement without prior notice. The performance specification figures indicated are nominal values of production units. There may be some deviations from these values in individual units.

NOTE

- Refer to inside back cover for dimensional drawings.

Optional accessory

The listed optional accessories are available for the LCD colour TV. Please purchase them at your nearest shop.

- Additional optional accessories may be available in near future. When purchasing, please read the newest catalogue for compatibility and check the availability.

Part name	Part number
Wall mount bracket (LC-32D44E, LC-32D44S)	AN-37AG5

[2] OPERATION MANUAL

Remote control unit

1 ⏻ I **(Standby/On)**
Enter standby mode or turn on the power.

2 **AV MODE**
Select a video setting.

3 **0–9**
Set the channel in TV and DTV mode.
Set the page in Teletext mode.

When Sweden is selected in the country setting from the Initial auto installation, DTV channels are 4-digit. When another country is selected, DTV channels are 3-digit.

4 **(Flashback)**
Press to return to the previous image in normal viewing mode. (Will not work while operating in EPG/ESG screen.)

5 **(WIDE MODE)**
Select the wide mode.

6 I/II/I+II **(Sound mode)**
Select the sound multiplex mode.
(See below.)

7 **EPG**
DTV: To display EPG (Electronic Programme Guide) screen.

8 **ESG**
DTV: To display ESG (Electronic Service Guide) screen.

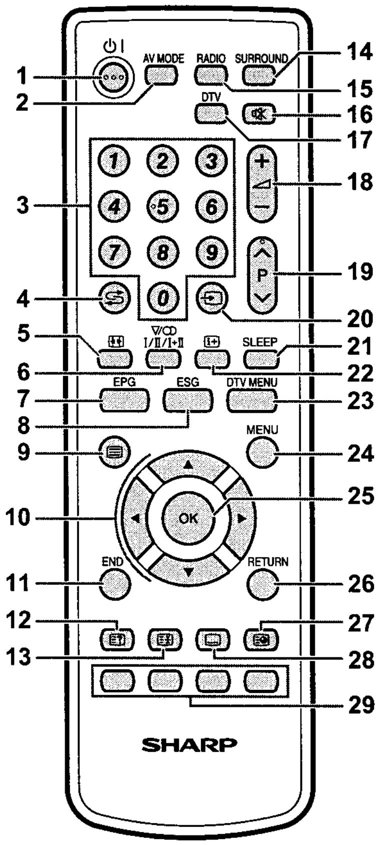
9 **(Teletext)**
Select the TELETEXT mode. (All TV image, DTV/DATA image, all TEXT image, TV/TEXT image)
DTV: Select DTV data broadcasting and TELETEXT.

10 **▲/▼/◄/► (Cursor)**
Select a desired item on the setting screen.

11 **END**
Exit the menu screen.

12 **(Reveal hidden Teletext)**

13 **(Freeze/Hold)**



14 **SURROUND**
Switch the surround effects on and off.

15 **RADIO**
DTV: Switch between RADIO and DTV mode.

16 **(Mute)**
Switch the sound on and off.

17 **DTV**
Press to access DTV mode while watching other input sources, and vice versa.
(This button will not work if you were watching DTV immediately before turning off the TV. In this case first select any other input source except DTV using the button.)

18 **(+/-) (Volume)**
(+) Increase the volume.
(-) Decrease the volume.

19 **P (∧/∨)**
TV/DTV: Select the channel.
External: Switch to TV or DTV input mode.
eletext: Move to the next/previous

20 **(INPUT SOURCE)**
Select an input source.
(TV, DTV, EXT1, EXT2, EXT3, EXT4, EXT5, EXT6, EXT7)

21 **SLEEP**
Set the sleep timer on (in units of 30 min. up to max. 2 hr. 30 min) and off.

22 **(Display information)**

23 **DTV MENU**
DTV: Display DTV Menu screen.

24 **MENU**
Display the MENU screen.

25 **OK**
Execute a command within the menu screen.
Display the programme list. (Except external input.)

26 **RETURN**
Return to the previous menu screen.

27 **(Subpage)**

28 **(Subtitle for Teletext)**
TV/External: To turn the subtitles on and off.
DTV: Display the subtitle selection screen.

29 **Colour (Red/Green/Yellow/Blue)**
TELETEXT: Select a page.
DTV: The coloured buttons are used to select correspondingly to the coloured items in the menu screen.

● Using I/II/I+II on the remote control unit

DTV mode:

Press I/II/I+II to open the multi audio screen.

Analogue TV mode:

Each time you press I/II/I+II, the mode switches as illustrated in the following tables.

NICAM TV broadcasts selection

Signal	Selectable items
Stereo	NICAM STEREO, MONO
Bilingual	NICAM CH A, NICAM CH B, NICAM CH AB, MONO
Monaural	NICAM MONO, MONO

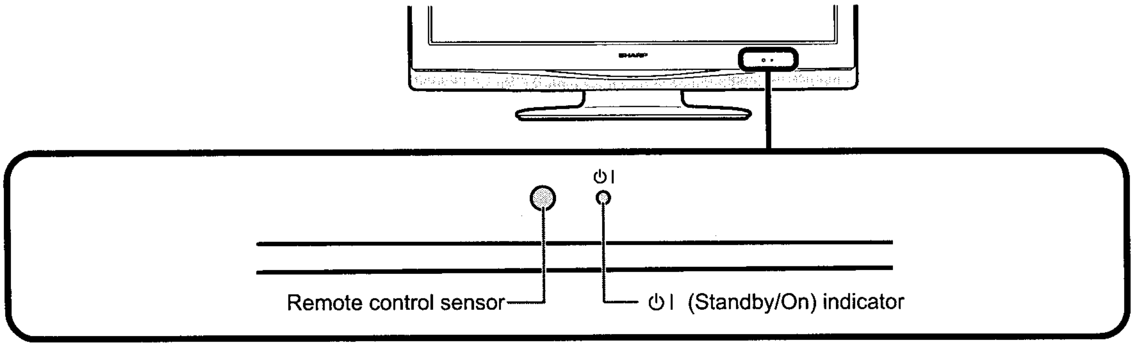
A2 TV broadcasts selection

Signal	Selectable items
Stereo	STEREO, MONO
Bilingual	CH A, CH B, CH AB
Monaural	MONO

NOTE

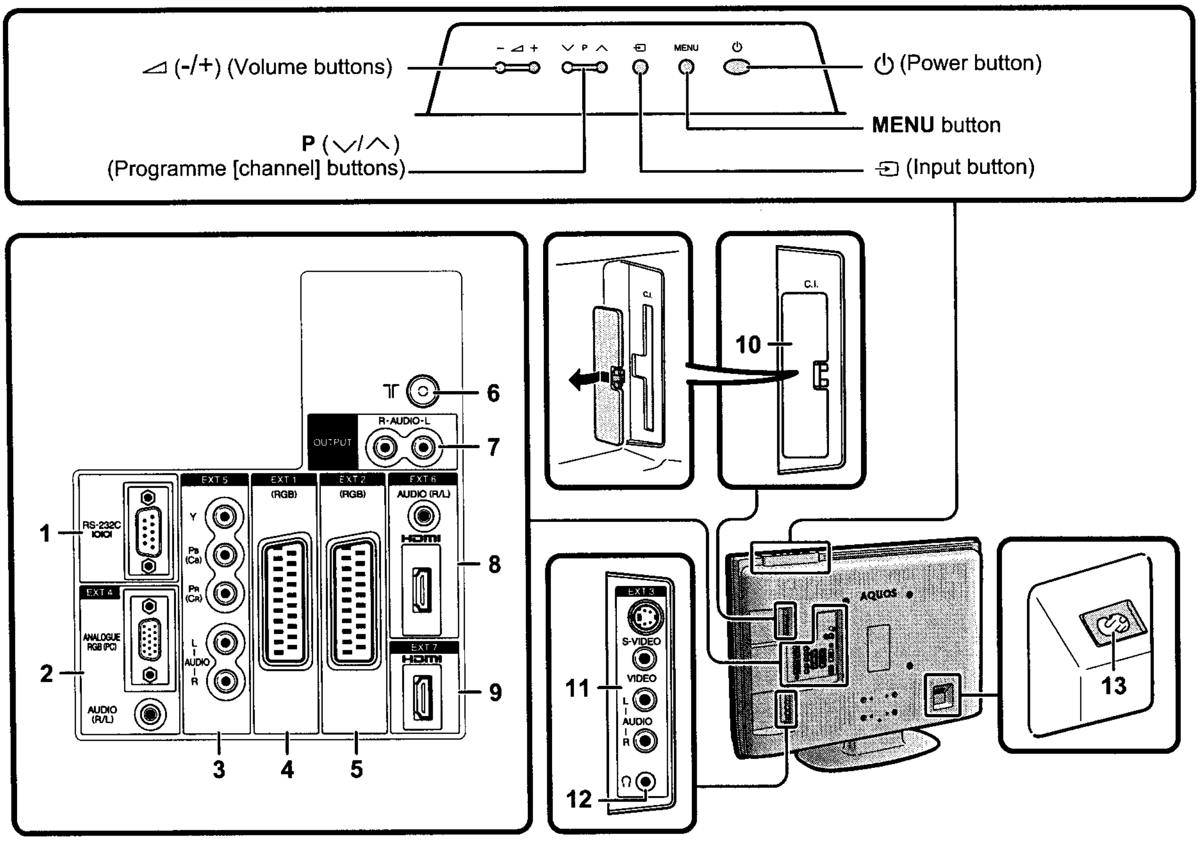
- When no signal is input, the sound mode will display "MONO".

TV (Front view)



⏻ I
Remote control sensor
⏻ I (Standby/On) indicator

TV (Rear view)



⊿ (-/+) (Volume buttons)
P (∨/∧)
(Programme [channel] buttons)
⏻ (Power button)
MENU button
(Input button)
- ⊿ +
∨ P ∧
MENU
⏻
C.I.
10
1
RS-232C
2
EXT 4
ANALOGUE RGB (PC)
AUDIO (R/L)
EXT 5
Y
PB (CB)
PR (CR)
L AUDIO R
EXT 1 (RGB)
EXT 2 (RGB)
EXT 6
AUDIO (R/L)
HDMI
EXT 7
HDMI
3
4
5
6
7
8
9
OUTPUT
R-AUDIO-L
EXT 3
S-VIDEO
VIDEO
L AUDIO R
11
12
13
AQUOS

1 RS-232C terminal
2 EXT 4 (ANALOGUE RGB/AUDIO) terminals
3 EXT 5 (COMPONENT) terminals
4 EXT 1 (RGB) terminal
5 EXT 2 (RGB) terminal
6 Antenna input terminal (DVB-T 5V=/80 mA)
7 OUTPUT (AUDIO) terminals
8 EXT 6 (HDMI/AUDIO) terminals
9 EXT 7 (HDMI) terminal
10 COMMON INTERFACE slot
11 EXT 3 terminals
12 Headphone jack
13 AC INPUT terminal

NOTE

- Only if you use an active terrestrial antenna, select “On (5V)” under “Supply Voltage”.

Appendix

Troubleshooting

Problem	Possible Solution
• No power.	• Check if you pressed ⏻ I on the remote control unit. If the indicator on the TV lights up red, press ⏻ I. • Is the AC cord disconnected? • Check if you pressed ⏻ I on the TV.
• Unit cannot be operated.	• External influences such as lightning, static electricity, etc., may cause improper operation. In this case, operate the unit after first turning the power off, or unplugging the AC cord and re-plugging it in after 1 or 2 minutes.
• Remote control unit does not operate.	• Are batteries inserted with polarity (+, -) aligned? • Are batteries worn out? (Replace with new batteries.) • Are you using it under strong or fluorescent lighting? • Is a fluorescent light illuminated to remote control sensor?
• Picture is cut off.	• Is the image position correct? • Are screen mode adjustments (4:3 Mode/WSS) such as picture size made correctly?
• Strange colour, light colour, or dark, or colour misalignment.	• Adjust the picture tone. • Is the room too bright? The picture may look dark in a room that is too bright. • Check the colour system setting. • Check the HDMI Setup setting.
• Power is suddenly turned off.	• The unit's internal temperature has increased. Remove any objects blocking vent or clean. • Check the power control setting. • Is sleep timer set? Press **SLEEP** on the remote control unit until it sets to Off.
• No picture.	• Is connection to other components correct? • Is input signal type selected correctly after connection? • Is the correct input source selected? • Is non-compatible signal being input? • Is picture adjustment correct? • Is the antenna connected properly? • Is "On" selected in "Audio Only"?
• No sound.	• Is the volume too low? • Make sure that headphones are not connected. • Check if you pressed on the remote control unit.
• The DTV menu screen is displayed in monochrome and hard to select the item.	• Check if "Monochrome" is set to "On". If so, set it to "Off".
• The TV sometimes makes a cracking sound.	• This is not a malfunction. This happens when the cabinet slightly expands and contracts according to change in temperature. This does not affect the TV's performance.

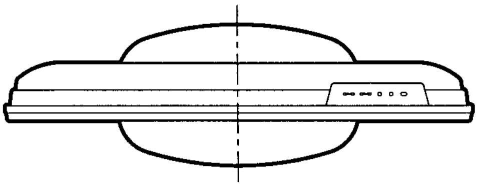
Cautions regarding use in high and low temperature environments

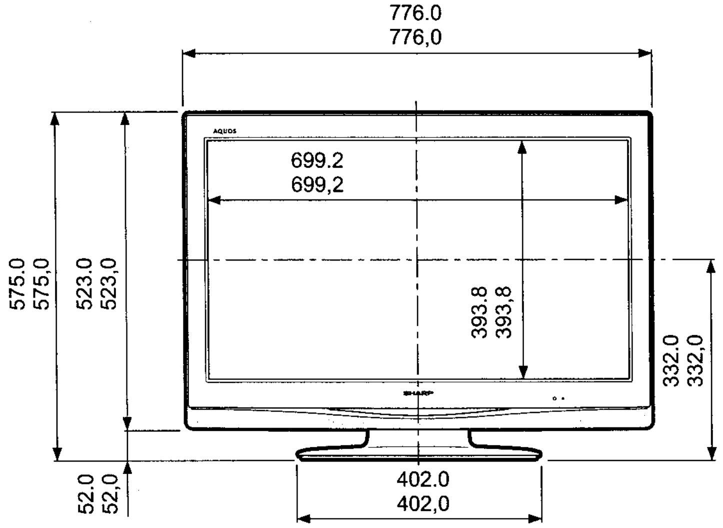
- When the unit is used in a low temperature space (e.g. room, office), the picture may leave trails or appear slightly delayed. This is not a malfunction, and the unit will recover when the temperature returns to normal.
- Do not leave the unit in a hot or cold location. Also, do not leave the unit in a location exposed to direct sunlight or near a heater, as this may cause the cabinet to deform and the LCD panel to malfunction.
  Storage temperature: -20°C to +60°C.

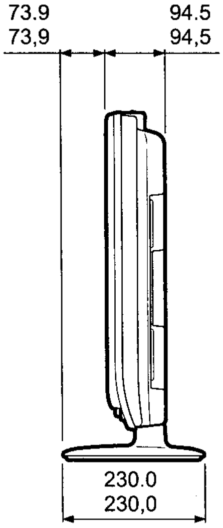
IMPORTANT NOTE ON RESETTING THE PIN

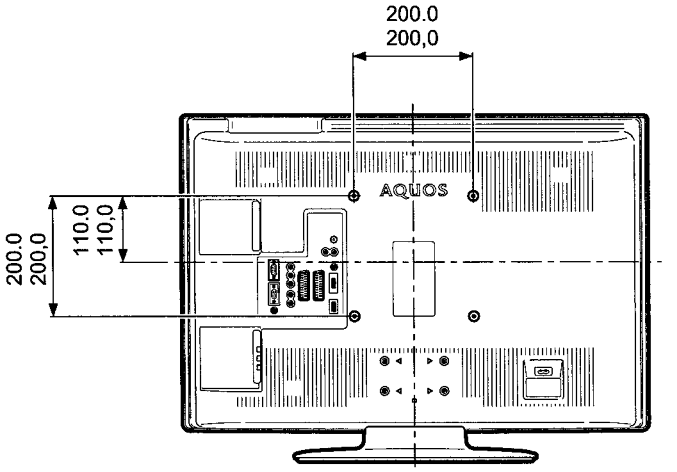
We suggest that you remove the following instruction from the operation manual to prevent children from reading it. As this operation manual is multilingual, we also suggest the same with each language. Keep it in a safe space for future reference.

[3] DIMENSIONS




776.0
776,0
AQUOS
699.2
699,2
575.0
575,0
523.0
523,0
393.8
393,8
332.0
332,0
52.0
52,0
402.0
402,0

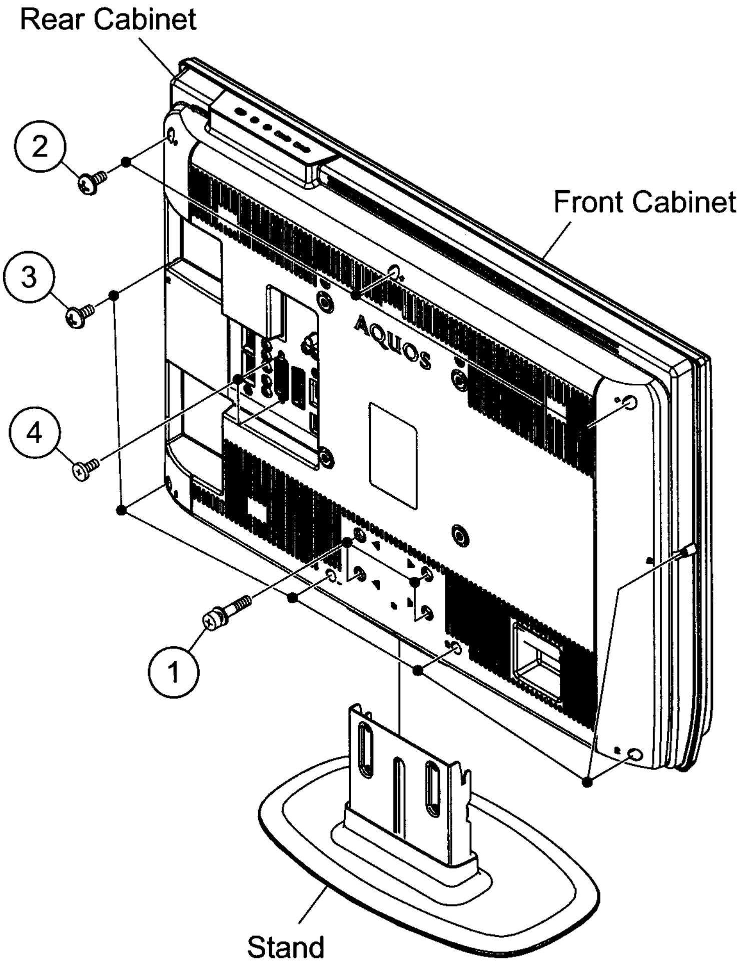

73.9
73,9
94.5
94,5
230.0
230,0


200.0
200,0
AQUOS
110.0
110,0
200.0
200,0

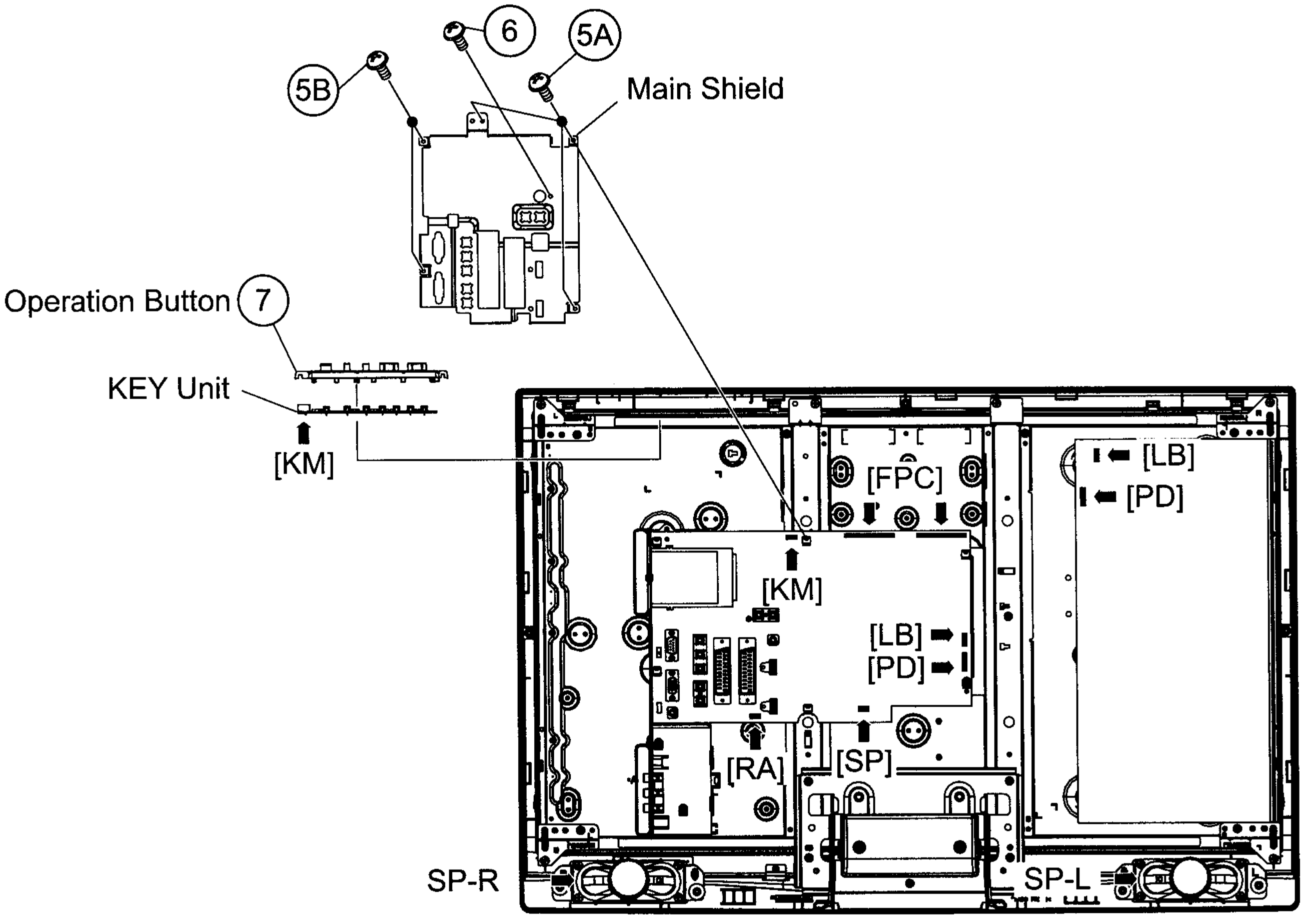
CHAPTER 2. REMOVING OF MAJOR PARTS

[1] REMOVING OF MAJOR PARTS

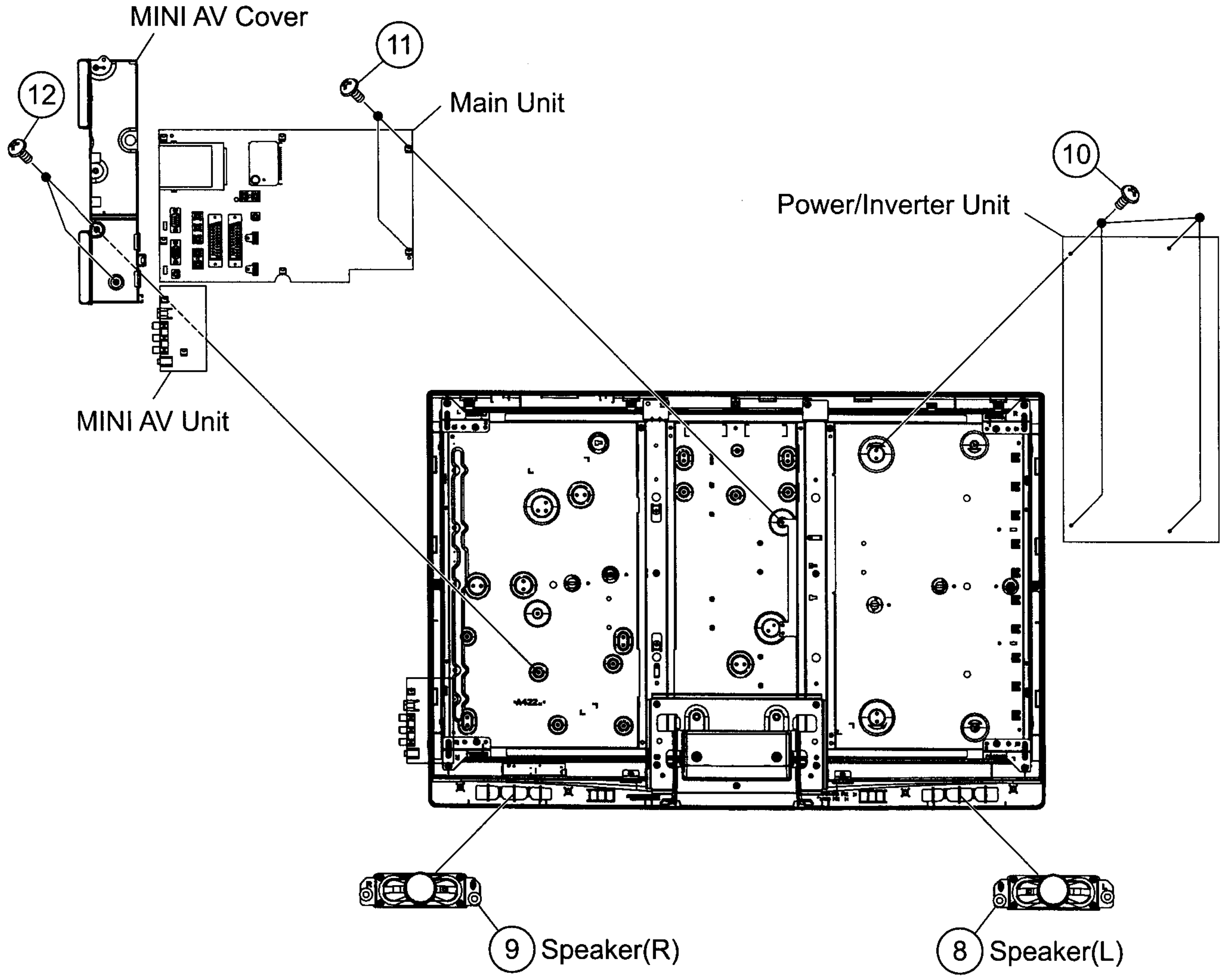
1. Remove the 4 lock screws ① and detach the Stand.
2. Remove the 3 lock screws ②, 6 lock screws ③, 2 lock screw ④ and detach the Rear Cabinet.


Rear Cabinet
2
Front Cabinet
3
AQUOS
4
1
Stand

3. Remove the 3 lock screws ⑤A, 2 lock screws ⑤B, 1 lock screws ⑥ and detach the Main Shield.
4. Disconnect all the connectors from all the PWBs.
5. Remove the KEY Unit Ass'y ⑦.


6
5A
5B
Main Shield
Operation Button 7
KEY Unit
[KM]
[FPC]
[LB]
[PD]
[KM]
[LB]
[PD]
[RA]
[SP]
SP-R
SP-L

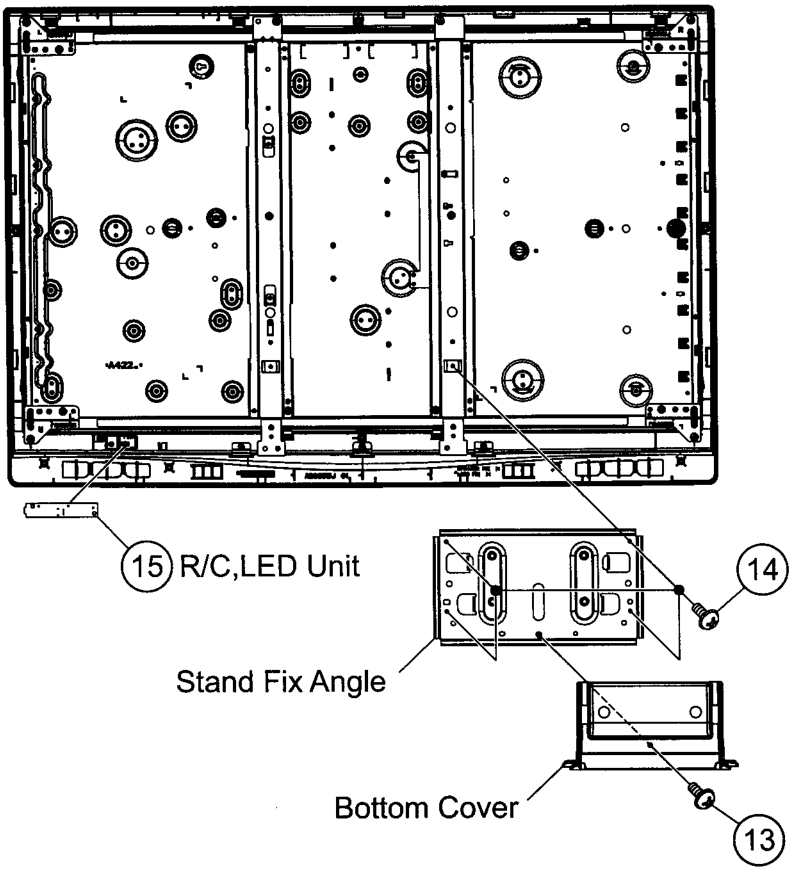
6. Remove the Speaker (L)⑧, (R)⑨.
7. Remove the 4 lock screws⑩ and detach the POWER/INVERTER Unit.
8. Remove the 2 lock screws⑪, and detach the MAIN Unit.
9. Remove the 2 lock screws⑫ and detach the MINI AV Unit.


MINI AV Cover
⑪
⑫
Main Unit
⑩
Power/Inverter Unit
MINI AV Unit
⑨ Speaker(R)
⑧ Speaker(L)

10.Remove the 1 lock screw ⑬ and detach the Bottom Cover.

11.Remove the 4 lock screws ⑭ and detach the Stand Fix Angle.

12.Remove the R/C, LED Unit ⑮.

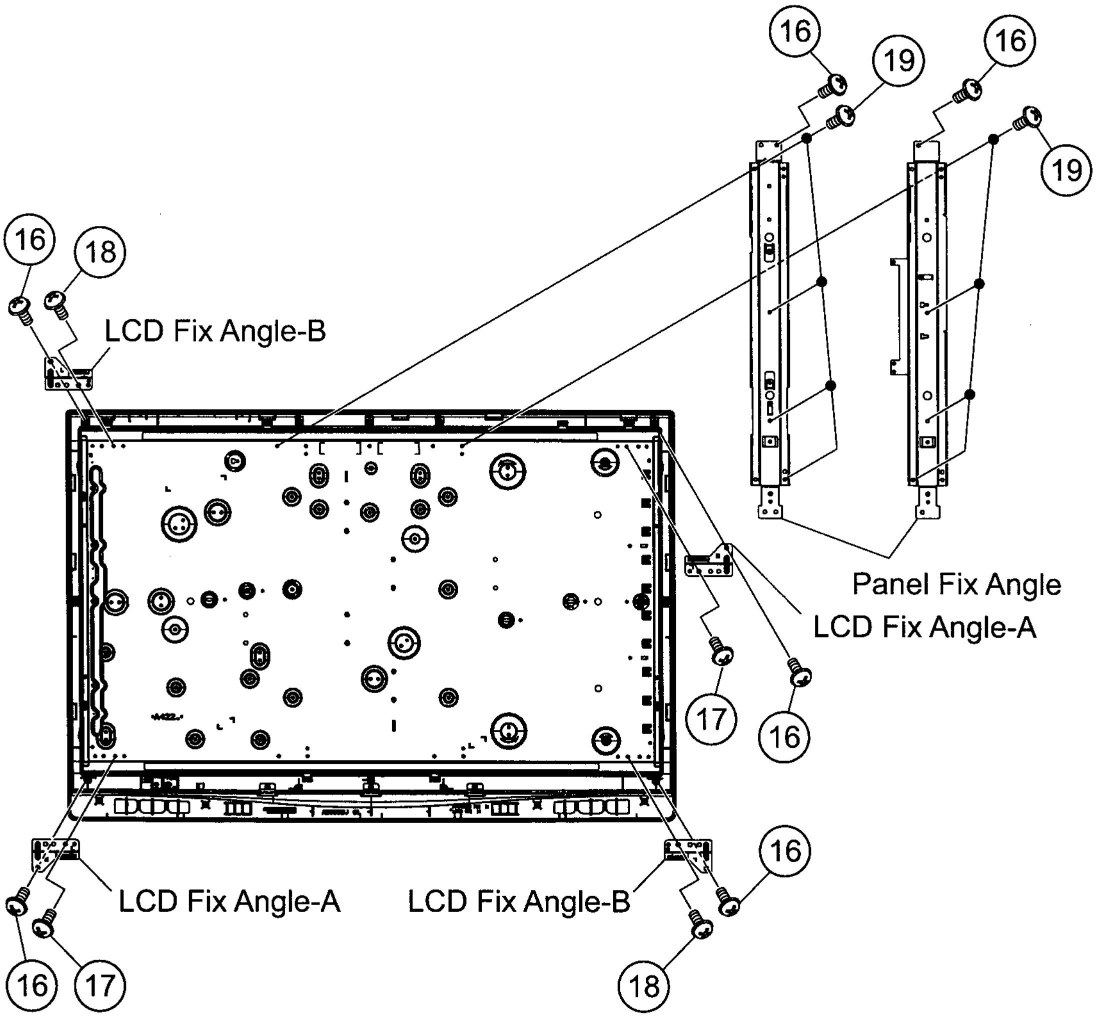

⑮ R/C,LED Unit
⑭
Stand Fix Angle
Bottom Cover
⑬

13.Remove the 6 lock screws ⑯ and detach the LCD Panel Module.

14.Remove the 2 lock screws ⑰ and detach the LCD Fix Angle-A.

15.Remove the 2 lock screws ⑱ and detach the LCD Fix Angle-B.

16.Remove the 8 lock screws ⑲ and detach the Panel Fix Angle.


⑯
⑲
⑯
⑲
⑯
⑱
LCD Fix Angle-B
Panel Fix Angle
LCD Fix Angle-A
⑰
⑯
⑯
LCD Fix Angle-A
LCD Fix Angle-B
⑯
⑰
⑱

CHAPTER 3. ADJUSTMENT

[1] After replacement of any PWB and/or IC for repair, note the following.

When replacing the following units, be sure to prepare the new units loaded with updated software.

MAIN-UNIT: DUNTKE449FM02

- Note that an IC into which ROM data is written is available for MAIN-UNIT servicing (see below)

IC1902	RH-iXC448WJZZS	EDID (HDMI)
IC1922	RH-iXC447WJZZS	EDID (HDMI)
IC2321	RH-iXC206WJQZS	EDID (PC)
IC8101	RH-iXC639WJZZS	EEPROM

[2] SOFTWARE UPDATING

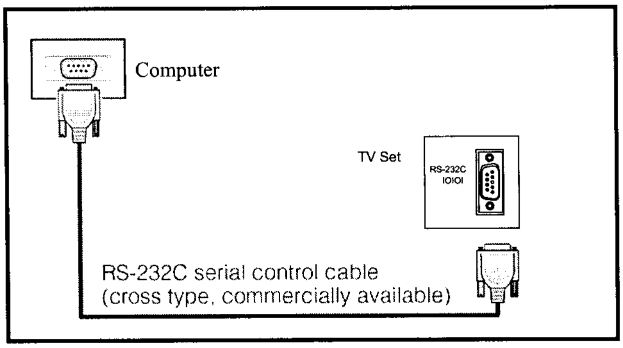
There are 2 methods to update software in the VCTp: I2C method, RS-232C HyperTerminal and RS-232C Tera Term method.

- RS-232C method is allowed when the TV is working properly and the action should be only software upgrade.

1. RS-232C Method Description (HyperTerminal).

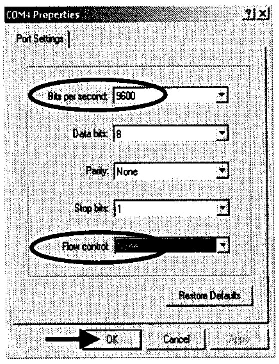
The hardware tools requirement are:

1. A Modem-null (Cross type) DB9 female to DB9 female cable.
2. Make the connections as indicated in the figure:


Computer
TV Set
RS-232C
IOIOI
RS-232C serial control cable
(cross type, commercially available)

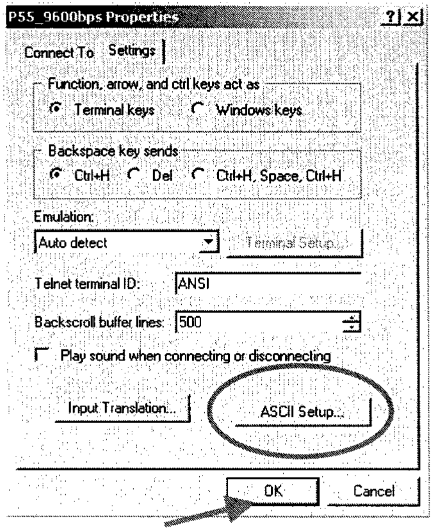
Before using RS-232C updating method is necessary to configure a Terminal PC software. HyperTerminal has been selected as a Terminal software because it's include in all Windows versions as an accessory, and you can find it inside "Accessories\Communications" folder. For this reason, please follow carefully the next steps:

1) First time HyperTerminal is used, it's necessary to configure some settings. Follows next action to configure two connection: low speed (9600bps) and high speed (115200bps).
2) Create a New Connection file with name "P55_9600bps".
3) Select a free COM port and select the Port Settings properties as follows:



Bits per second: 9600
Data bits: 8
Parity: None
Stop bits: 1
Flow control: None

4) Click on "File\Properties" menu for selecting the General and ASCII properties as follows:


P55_9600bps Properties

Connect To | Settings

Function, arrow, and ctrl keys act as
● Terminal keys ○ Windows keys

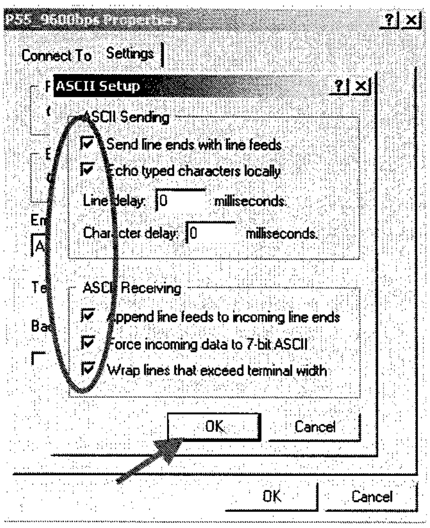
Backspace key sends
● Ctrl+H ○ Del ○ Ctrl+H, Space, Ctrl+H

Emulation: Auto detect

Telnet terminal ID: ANSI

Backscroll buffer lines: 500

☐ Play sound when connecting or disconnecting


P55_9600bps Properties

ASCII Setup

ASCII Sending
☑ Send line ends with line feeds
☑ Echo typed characters locally
Line delay: 0 milliseconds.
Character delay: 0 milliseconds.

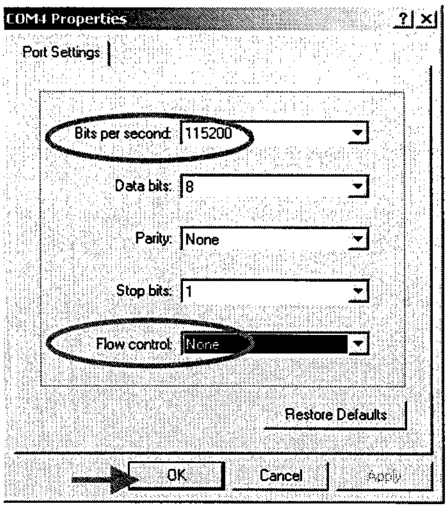
ASCII Receiving
☑ Append line feeds to incoming line ends
☑ Force incoming data to 7-bit ASCII
☑ Wrap lines that exceed terminal width

5) Select "New Connection" in the File Menu.

6) Answer "Yes" to close current connection and "Yes" to save session "P55_9600bps".

7) Create a new connection with the name "P55_115200bps".

8) Select a the same COM port used in item 2 and select the Port Settings properties as follows:


COM4 Properties

Port Settings

Bits per second: 115200

Data bits: 8

Parity: None

Stop bits: 1

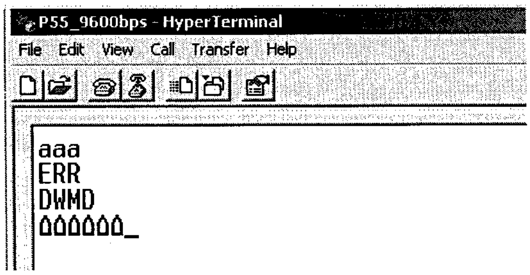
Flow control: None

9) Select the same General and ASCII properties as item 3.

10)Close HyperTerminal session, answering "Yes" to close current connection and "Yes" to save session "P55_115200bps".

To start updating session, click over "P55_9600bps" icon that you can find in the "START\All programs\Accessories\ Communications\HyperTerminal\HyperTerminal" folder and follow next procedure:

1) Check the connection between TV set and PC, sending a wrong command, as for example: “aaa”. TV set returns an “ERR” label as an syntaxis ERROR (Not correct order or sequence).

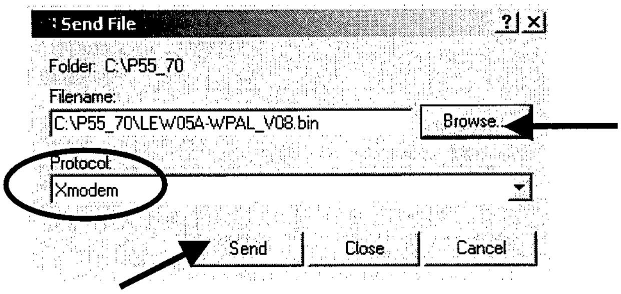

P55_9600bps - HyperTerminal
File Edit View Call Transfer Help

```
aaa
ERR
DWMD
ÔÔÔÔÔÔ_
```

2) Send the command “DWMD” to enter TV set in Download Mode. The TV set answer sending same symbol continuosly. If this symbol character doesn’t appear, please don’t worry and pass to next step.

3) Close this connection and open “P55_115200bps” connection clicking over the “P55_115200bps” that you can find in “START\All programs\Accessories\ Communications\HyperTerminal\HyperTerminal” folder.

4) Using “Transfer\Send file...” menu, select desired file (.bin format) and the transmission protocol (Xmodem) as show below.

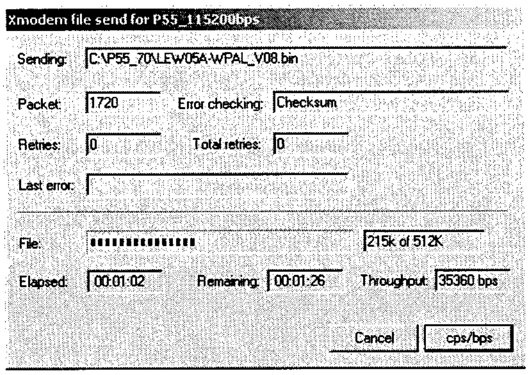

Send File
?
×
Browse...
Send
Close
Cancel

Folder: C:\P55_70

Filename: C:\P55_70\LEW05A-WPAL_V08.bin

Protocol: Xmodem

5) After press “Send” button the updating process starts as follows:


Xmodem file send for P55_115200bps
Cancel
cps/bps

Sending: C:\P55_70\LEW05A-WPAL_V08.bin

Packet: 1720 Error checking: Checksum

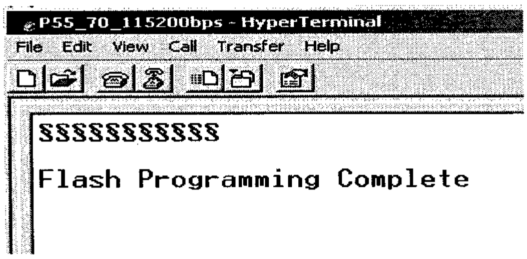
Retries: 0 Total retries: 0

Last error:

File: 215k of 512K

Elapsed: 00:01:02 Remaining: 00:01:26 Throughput: 35360 bps

6) When flash update process finishes, the “Flash Programming Complete” label appears in the screen, the device automatically go to switch off, and in a few seconds go to switch on again.


P55_70_115200bps - HyperTerminal
File Edit View Call Transfer Help

```
SSSSSSSSSSSS
Flash Programming Complete
```

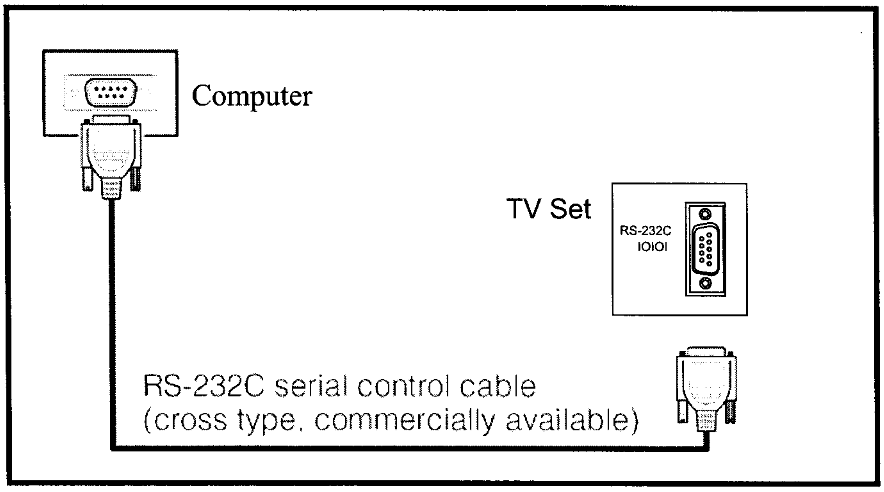
VERY IMPORTANT NOTE:

During the updating time, please don’t use the PC for other purpouses, in order to abolish communication problems between TV set and PC. If TV set was not updated properly, the TV won’t have the software to startup again, and you must follow the “I2C method” to update another time the TV set.

2. RS-232C Method Description (Tera Term)

The hardware tools requirement are:

1. A Modem-null (Cross type) DB9 female to DB9 female cable.
2. Make the connections as indicated in the figure:


Computer
TV Set
RS-232C
IOIOI
RS-232C serial control cable
(cross type, commercially available)

Software requirements:

To upgrade VCTp software from RS-232C external connector is necessary to use a Tera Term (Pro) free software.

The URL of Tera Term home page is:

http://hp.vector.co.jp/authors/VA002416/teraterm.html

(The address may be changed in future)

Tera Term (Pro) supported operating systems:

MS-Windows 95 or upper

MS-Windows NT 3.5 and 4.0 or upper

Note.- For Windows 3.1 use Tera Term version 1.X.

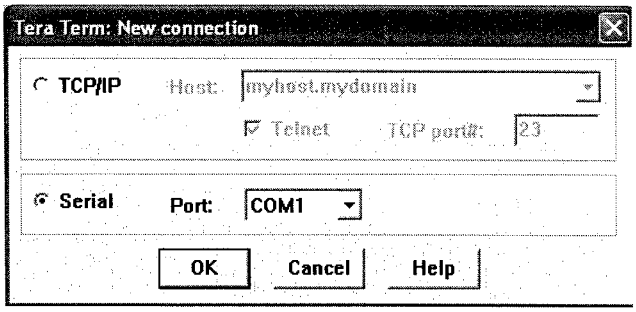
Copy all the distribution files to an empty floppy disk or temporary directory (for example C:\ TEMP).

Run SETUP.EXE and follow the instruction given by it.

After the installation, the distribution? les are no longer needed, you can delete them or may keep them in the floppy disk.

How to use Tera Term Pro:

When the Tera Term (Pro) program is used, it's necessary to shape some settings. Follows next action to configure the connection:

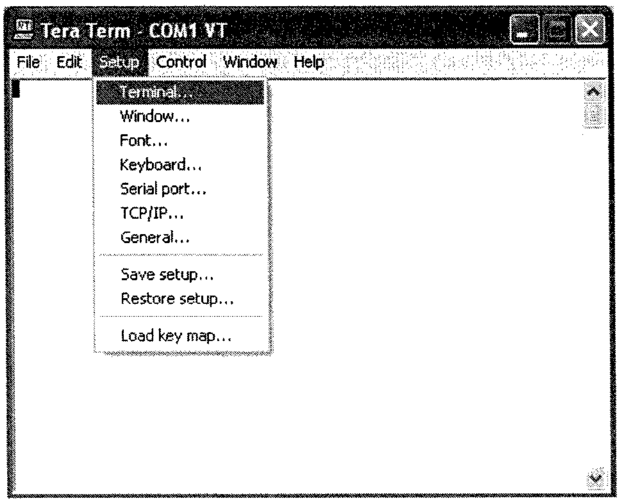


Tera Term: New connection

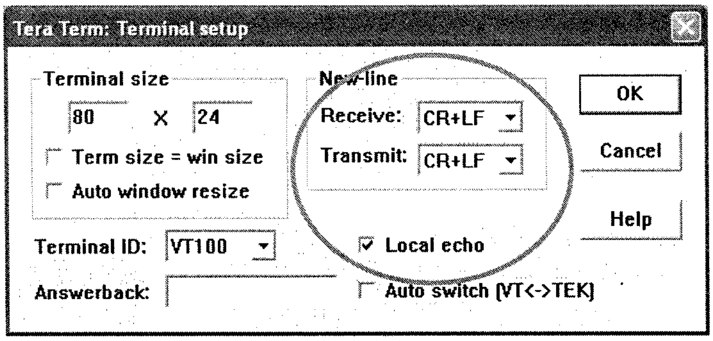
○ TCP/IP Host: myhost.mydomain
☑ Telnet TCP port#: 23

● Serial Port: COM1

1) Select: **Serial→COM X→ O.K.**


Tera Term - COM1 VT
File
Edit
Setup
Control
Window
Help
Terminal...
Window...
Font...
Keyboard...
Serial port...
TCP/IP...
General...
Save setup...
Restore setup...
Load key map...

2) Select: **Terminal**



Tera Term: Terminal setup

Terminal size
80 X 24
☐ Term size = win size
☐ Auto window resize

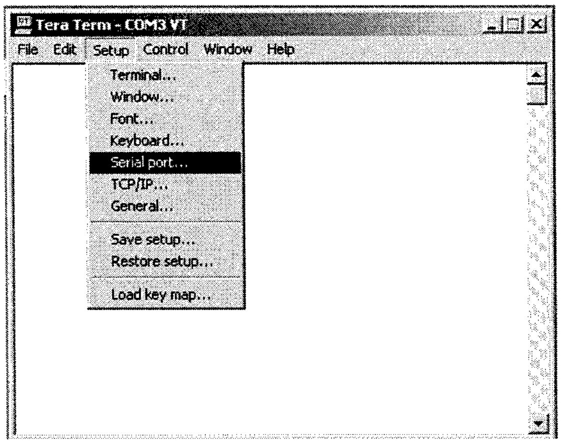
New-line
Receive: CR+LF
Transmit: CR+LF

☑ Local echo

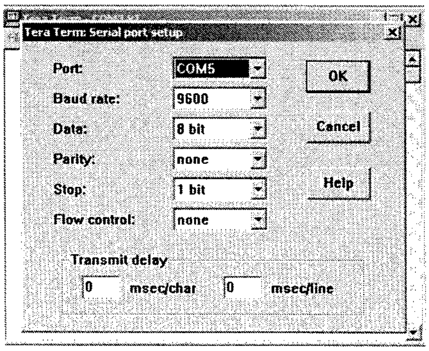
Terminal ID: VT100
Answerback:
☐ Auto switch [VT<->TEK]

OK
Cancel
Help

3) Choose the same options as the above picture.


Tera Term - COM3 VT
File
Edit
Setup
Control
Window
Help
Terminal...
Window...
Font...
Keyboard...
Serial port...
TCP/IP...
General...
Save setup...
Restore setup...
Load key map...

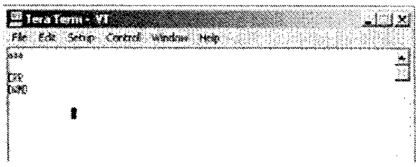
4) Select: **Setup** → **Serial port** → **O.K.** Appear the follow screen:


Tera Term: Serial port setup
OK
Cancel
Help
Transmit delay

Port: COM5
Baud rate: 9600
Data: 8 bit
Parity: none
Stop: 1 bit
Flow control: none
0 msec/char 0 msec/line

5) Select follows settings:

Serial port to use:	COM x
Baud rate:	9600
Data:	8 bits
Parity:	none
Stop:	1 bit
Flow control:	none
Enter O.K.	


Tera Term - VT
File Edit Setup Control Window Help

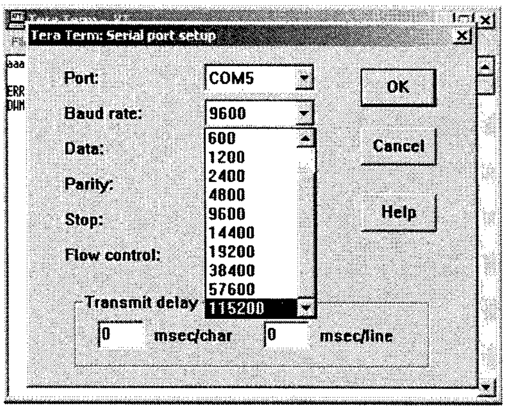
```
aaa

ERR
```

6) Check the connection between TV set and PC, sending a wrong command, as for example: “aaa”. TV set returns an “err” label as an syntaxes ERROR (Not correct order or sequence).

Send a “DWMD” (capital letters) command to enter TV set in Download Mode.

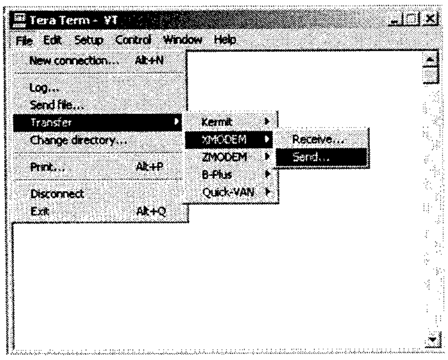
Change a baud rate to 115200.

Select: **Setup** → **Baud rate** → **115200** → **O.K.**

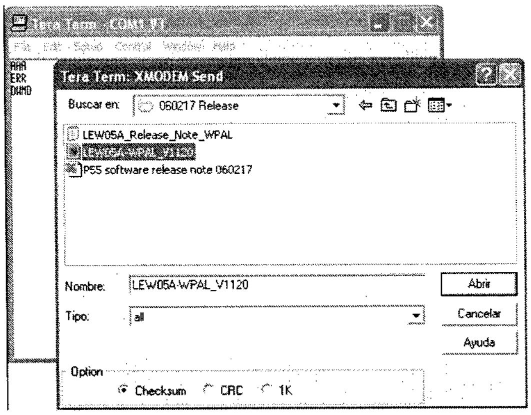

Tera Term: Serial port setup
OK
Cancel
Help
Transmit delay
600
1200
2400
4800
9600
14400
19200
38400
57600
115200

Port: COM5
Baud rate: 9600
Data:
Parity:
Stop:
Flow control:
0 msec/char 0 msec/line

7) Select: **File → Transfer → XMODEM → Sent**


Tera Term - VT
File Edit Setup Control Window Help
New connection... Alt+N
Log...
Send file...
Transfer
Change directory...
Print... Alt+P
Disconnect
Exit Alt+Q
Kermit
XMODEM
ZMODEM
B-Plus
Quick-VAN
Receive...
Send...

8) Choose the file for upgrade and click "Open".


Tera Term - COM1 VT
File Edit Setup Control Window Help
AAA
ERR
DWMD
Tera Term: XMODEM Send
LEW05A_Release_Note_WPAL
LEW05A-WPAL_V1120
P55 software release note 060217
Abrir
Cancelar
Ayuda

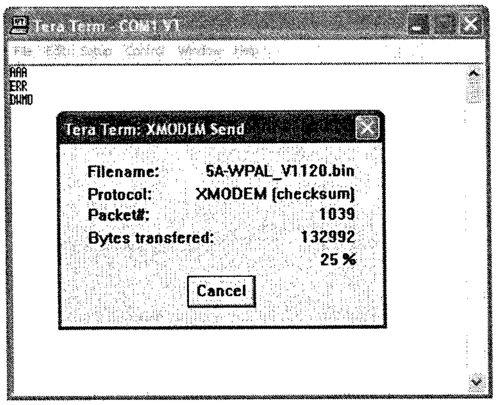
Buscar en: 060217 Release

Nombre: LEW05A-WPAL_V1120

Tipo: all

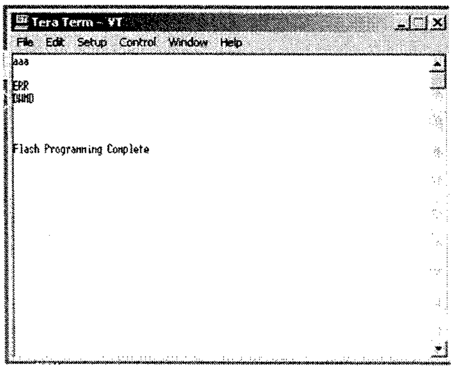
Option: ● Checksum ○ CRC ○ 1K

9) After select "Open" the upgrade process starts as follows:


Tera Term - COM1 VT
File Edit Setup Control Window Help
AAA
ERR
DWMD
Tera Term: XMODEM Send
Cancel

Filename: 5A-WPAL_V1120.bin
Protocol: XMODEM (checksum)
Packet#: 1039
Bytes transfered: 132992
25 %

10)When flash update process finishes, the "Flash programming complete" label appear in the screen, the device automatically go to switch off, and in a few seconds go to switch on again.


Tera Term - VT
File Edit Setup Control Window Help

```
aaa

ERR
[illegible]



Flash Programming Conplete
```

VERY IMPORTANT NOTE:

During the updating time, please don't use the PC for other purposes, in order to abolish communication problems between TV set and PC. If TV set was not updated properly, the TV won't have the software to startup again, and you must follow the "I2C method" to update another time the TV set.

3. How to update the Digital Board Software.

There are 2 methods to update the Digital Board Software on Flash Memory (IC4251) throught the Digital Processor (IC4001).

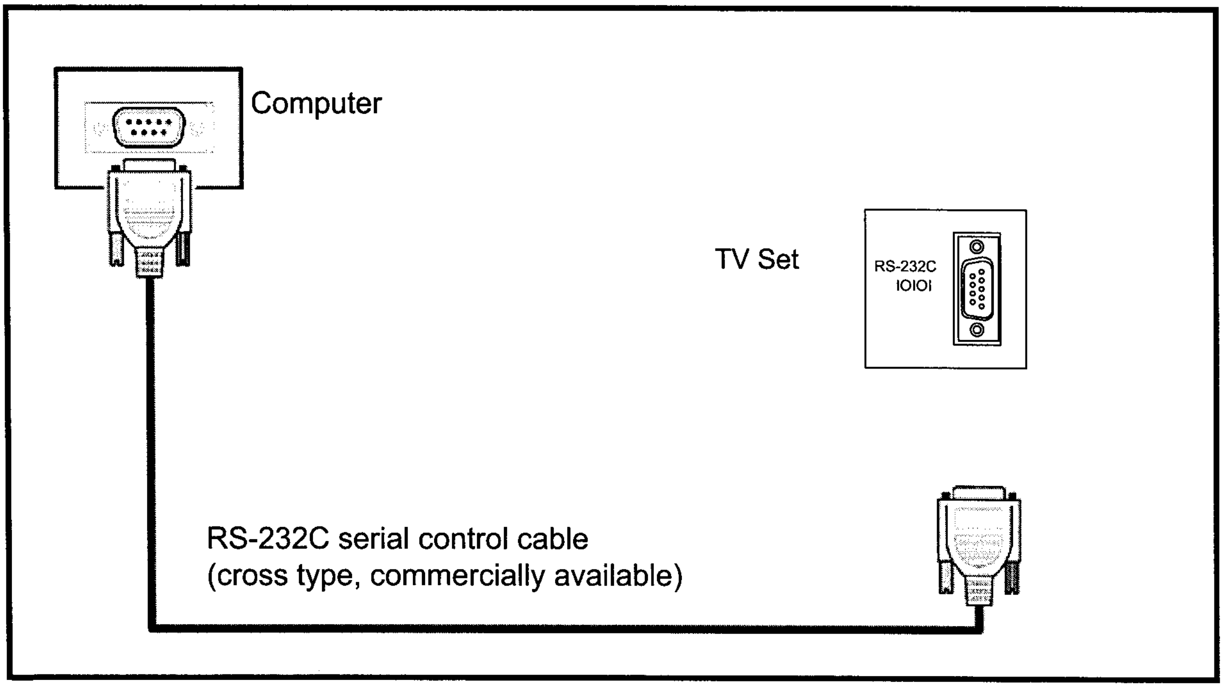
- RS-232 Method (From PC trough RS-232C COM port).
- PCMCIA CARD (Compact Flash Memory) Method.

NOTE: *The PCMCIA method is only compatible with those PCs running XP Windows Version.*

3.1. Jig RS-232 Method Description

- **Hardware requirements:**

1. A modem null (Cross type) DB9 female to DB9 female cable.
2. Make the connections as in the below figure.

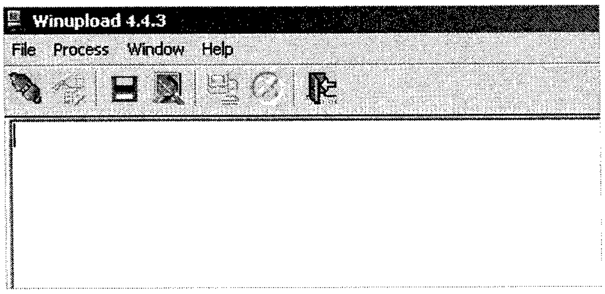

Computer
TV Set
RS-232C
IOIOI
RS-232C serial control cable
(cross type, commercially available)

- **Software requirements:**

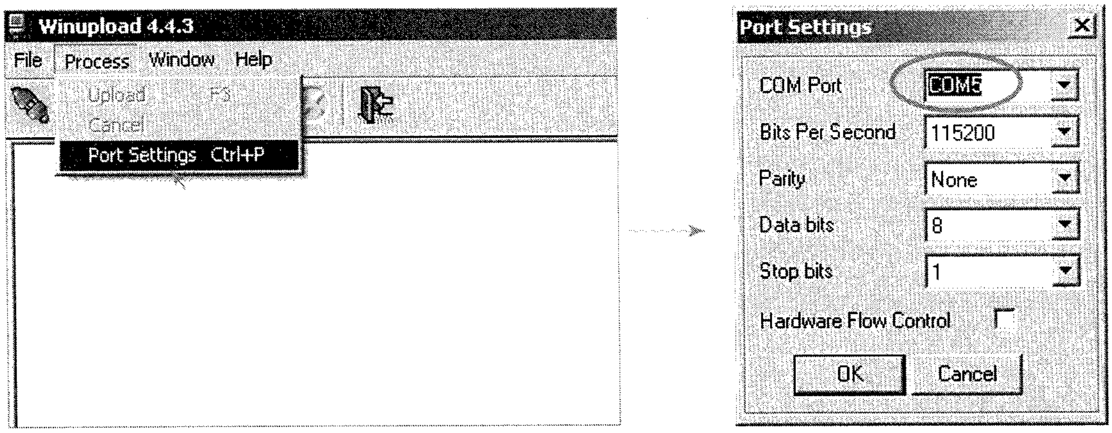
1. "Winupload" application software on PC.

- **How to setup the "Winupload" software for the first time:**

1. Start "Winupload". It will appear the following picture.


Winupload 4.4.3
File
Process
Window
Help

2. Select the most suitable RS232 Serial Port from "Port Setting" - "Process" Menu.


Winupload 4.4.3
File
Process
Window
Help
Upload F5
Cancel
Port Settings Ctrl+P
Port Settings
OK
Cancel

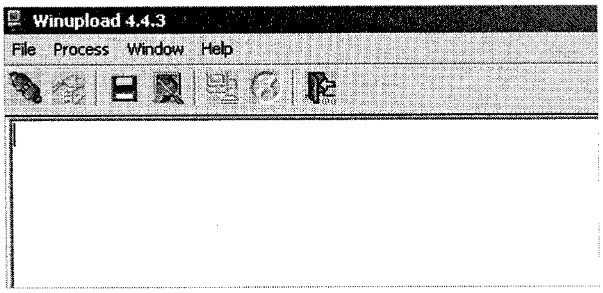
COM Port: COM5
Bits Per Second: 115200
Parity: None
Data bits: 8
Stop bits: 1
Hardware Flow Control: ☐

3. Select the following settings from "Port Settings" Menu.

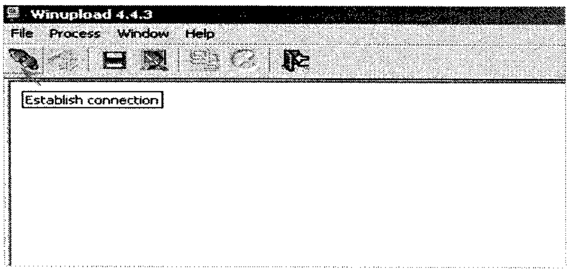
    Bits Per Second: 115200
    Parity: None
    Data bits: 8
    Stop bits: 1
    Hardware Flow Control: OFF

- **Procedure for updating the TV set.**

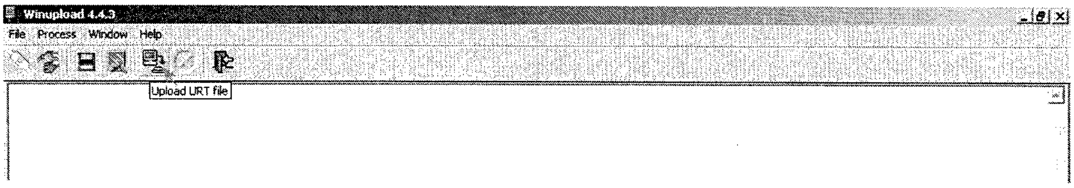
1. Switch off the TV set to be updated, in DTV mode.
2. Start "Winupload". It will appear the following picture on PC.


Winupload 4.4.3
File
Process
Window
Help

3. Establish connection on Winupload Software.

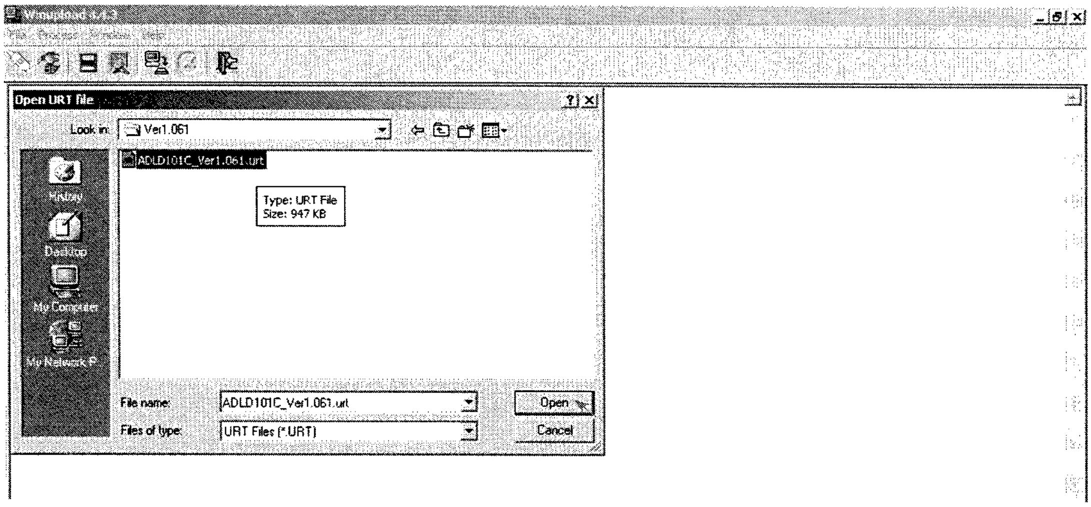

Winupload 4.4.3
File Process Window Help
Establish connection

4. Select "Upload URT file"


Winupload 4.4.3
File Process Window Help
Upload URT file

5. Select and open the ".urt" data file from data directory

NOTE: Consider the version shown below just an example, may be is not the latest one, and could be different depending on the TV set destination (market/Country) or model.


Winupload 4.4.3
File Process Window Help
Open URT file
History
Desktop
My Computer
My Network P
Open
Cancel

Look in: Ver1.061

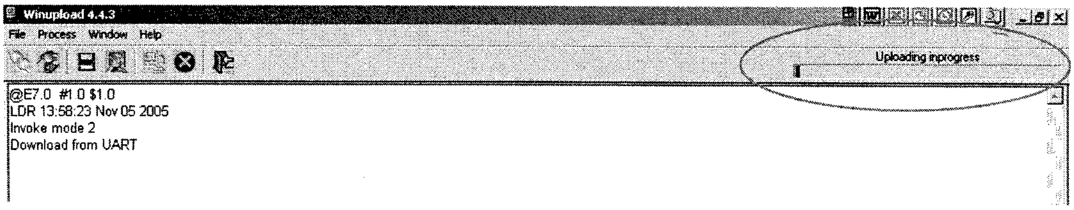
ADLD101C_Ver1.061.urt

Type: URT File
Size: 947 KB

File name: ADLD101C_Ver1.061.urt

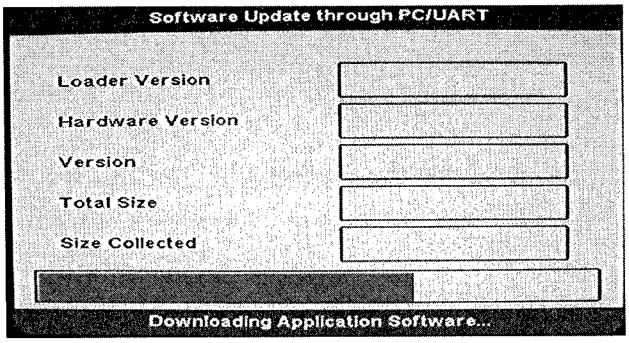
Files of type: URT Files (*.URT)

6. Switch On the TV Set (previously in DTV Mode). The Uploading Process starts automatically.


Winupload 4.4.3
File Process Window Help
Uploading inprogress

```
@E7.0 #1 0 $1.0
LDR 13:58:23 Nov 05 2005
Invoke mode 2
Download from UART
```

While the TV set is uploading the software, the following information is shown on the TV set screen.



Software Update through PC/UART

Loader Version

Hardware Version

Version

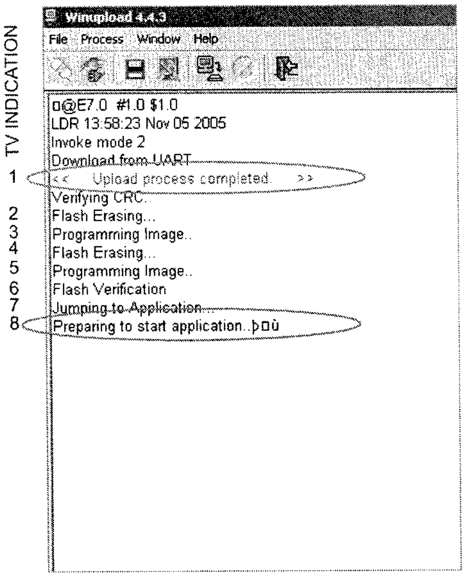
Total Size

Size Collected

Downloading Application Software...

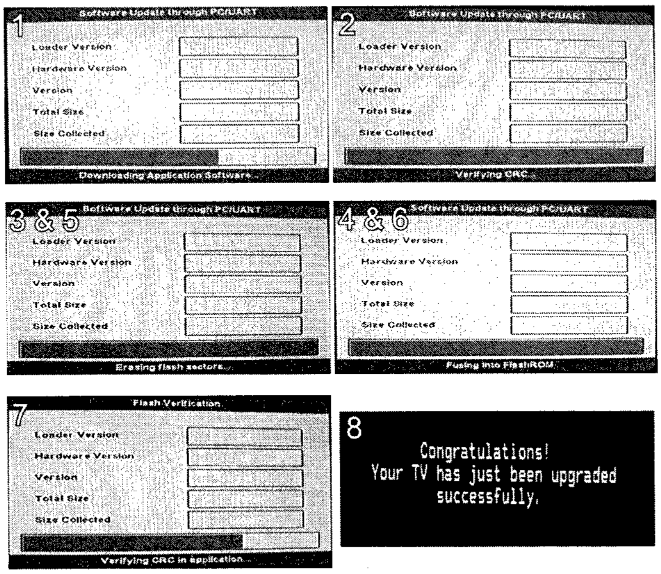
Then, data transfer from PC to TV set finishes when the "Upload progress completed" label appears in the "Winupload" screen. Now, the TV set made some additional verification (Items #2 to #7). When the full uploading process is finished, in the "Winupload" window appears the label "Preparing to start application" for a new TV Set, and just now, in the TV screen of the updated set, appears a congratulations label (Item #8).

PC SCREEN PROGRESS


TV INDICATION
Winupload 4.4.3
File Process Window Help

```
  □@E7.0 #1.0 $1.0
  LDR 13:58:23 Nov 05 2005
  Invoke mode 2
  Download from UART
1 << Upload process completed >>
  Verifying CRC...
2 Flash Erasing...
3 Programming Image..
4 Flash Erasing...
5 Programming Image..
6 Flash Verification
7 Jumping to Application...
8 Preparing to start application..þ□ù
```

TV SCREEN PROGRESS


1
Software Update through PC/UART
Loader Version
Hardware Version
Version
Total Size
Size Collected
Downloading Application Software...
2
Verifying CRC...
3 & 5
Erasing flash sectors...
4 & 6
Fusing into FlashROM...
7
Flash Verification
Verifying CRC in application...
8

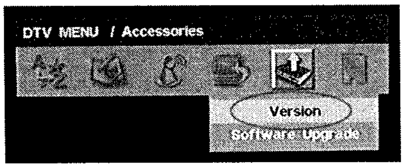
Congratulations!
Your TV has just been upgraded successfully.

NOTE: *Do not turn off the TV set while the software updating was in progress.*

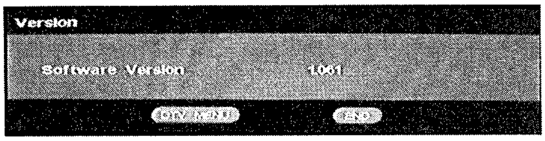
7. Unplug the AC cord.
8. Disconnect the Jig from TV Set.

- **Software Version verification procedure.**

1. Connect the AC cord and Switch On the TV Set.
2. Select DTV Menu on TV Set. The following On Screen Display will appear.


DTV MENU / Accessories
Version
Software Upgrade

3. Select "Version". The updated version can be verified.



Version

Software Version 1001

NOTE: Consider the version shown above just as example, may be is not the latest one, and could be different depending on the TV set destination (market/Country) or model.

4. Software Version Upgrade Using Card

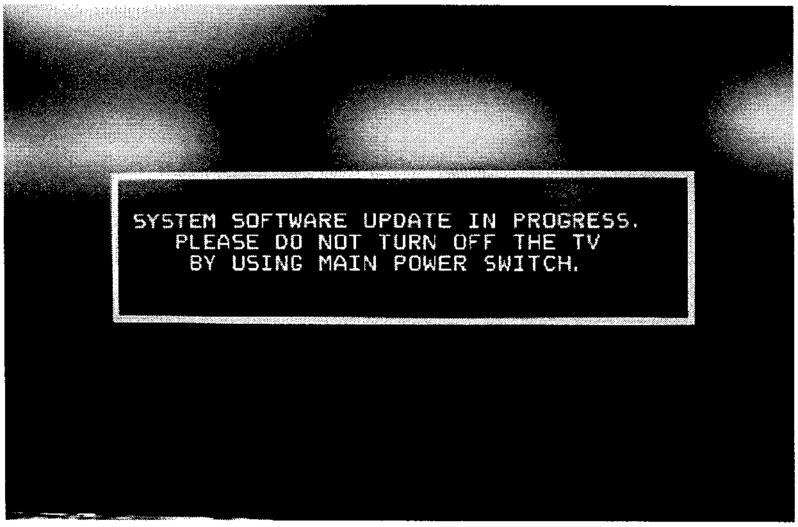
1. Write the software (ATV and DTV) on the PCMCIA CARD by following the procedure described in the separate document, “How to write software (ATV and DTV) to PCMCIA CARD”.

   (* In the document, both ATV and DTV are written; you may write either of them.)

   (You can equally use any version after “Storage Media Manager Version 1.3.1”.)
2. Turn off the power.

   (* You can select either of the mode ATV or DTV. In this document, ATV is selected.)
3. Insert the PCMCIA CARD with the upper side facing up into the card slot.

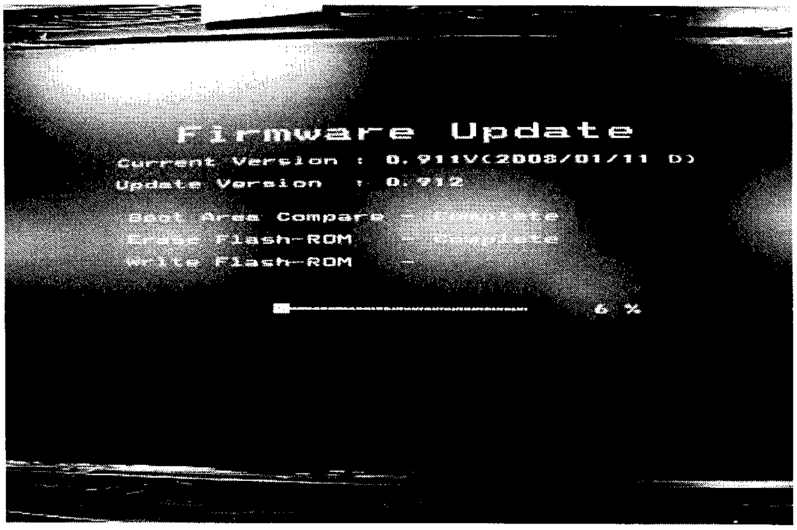
   (* Do not insert the card with the upper side facing down.)
4. Turn on the power. After a short time, the message, “SYSTEM SOFTWARE UPDATE IN PROGRESS. ...) appears and the software upgrade starts.



```
SYSTEM SOFTWARE UPDATE IN PROGRESS.
  PLEASE DO NOT TURN OFF THE TV
   BY USING MAIN POWER SWITCH.
```

If the ATV software upgrade is necessary, the step proceeds to (5); if unnecessary, the DTV software upgrade starts and the step proceeds to (7).

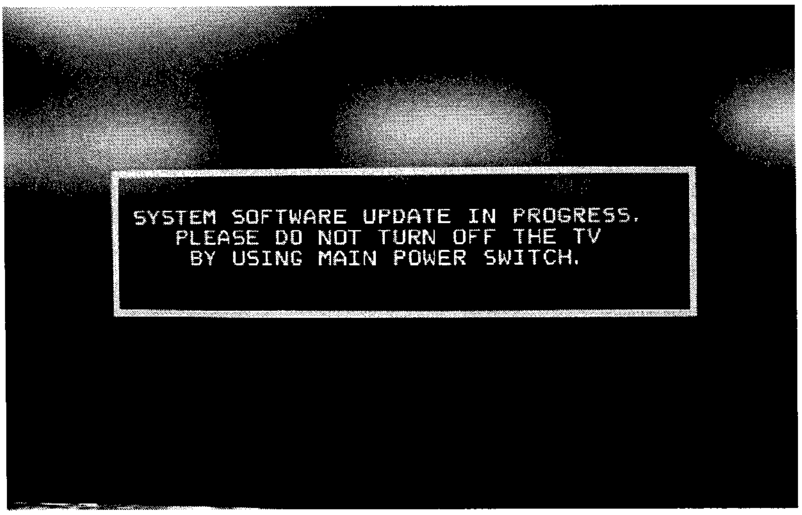
5. If the ATV software upgrade is necessary, the following display appears and the upgrade starts.



```
       Firmware Update
Current Version : 0.911V(2008/01/11 D)
Update Version  : 0.912

 Boot Area Compare - Complete
 Erase Flash-ROM   - Complete
 Write Flash-ROM   -

                                  6 %
```

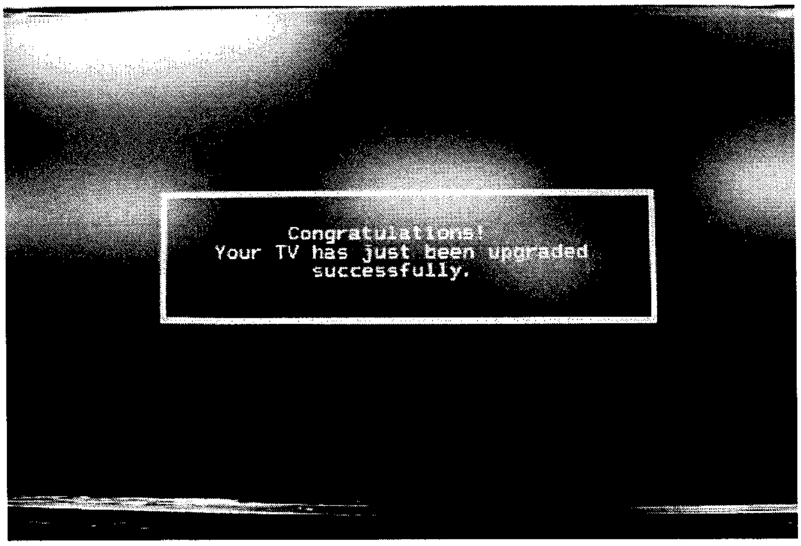
When the status bar reaches 100 %, the ATV upgrade is complete. Then the system restarts from the ATV mode. The step proceeds to (6).

6. The message, "SYSTEM SOFTWARE UPDATE IN PROGRESS. ..." appears again and the DTV software upgrade starts. Then the step proceeds to (7).



SYSTEM SOFTWARE UPDATE IN PROGRESS.
PLEASE DO NOT TURN OFF THE TV
BY USING MAIN POWER SWITCH.

7. After a short time, the message, "Congratulations! ..." appears. The upgrade is complete.



Congratulations!
Your TV has just been upgraded
successfully.

(Note: You cannot downgrade the ATV software but can downgrade the DTV software.)

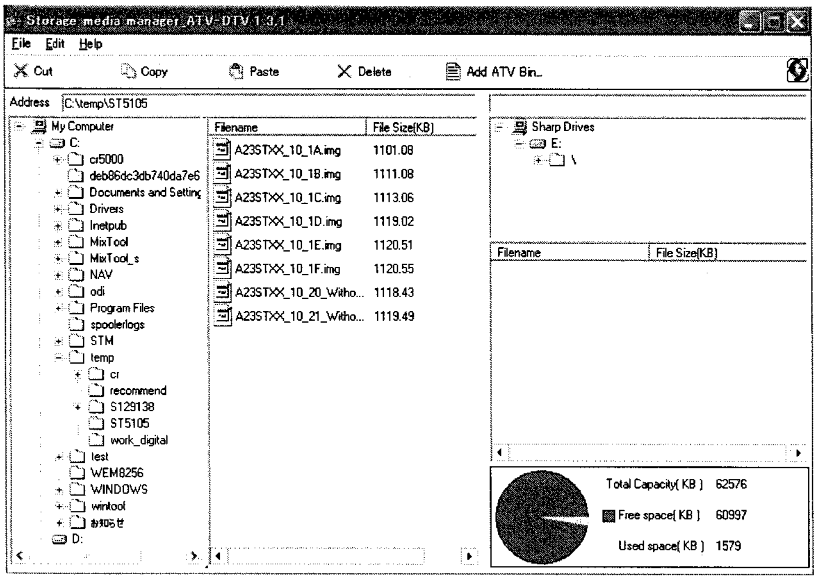
How to write software(ATV and DTV) to PCMCIA CARD

03Dec.2007
Writen by Kentaro Seyama(SHARP Japan)

1.When you write s/w , you should use "StorageMediaManager_ATV-DTV 1.3.1.exe"

StorageMediaManager_ATV-DTV 1.3.1.exe

2.Start "StorageMediaManager_ATV-DTV 1.3.1.exe".(Displayed as follows.)

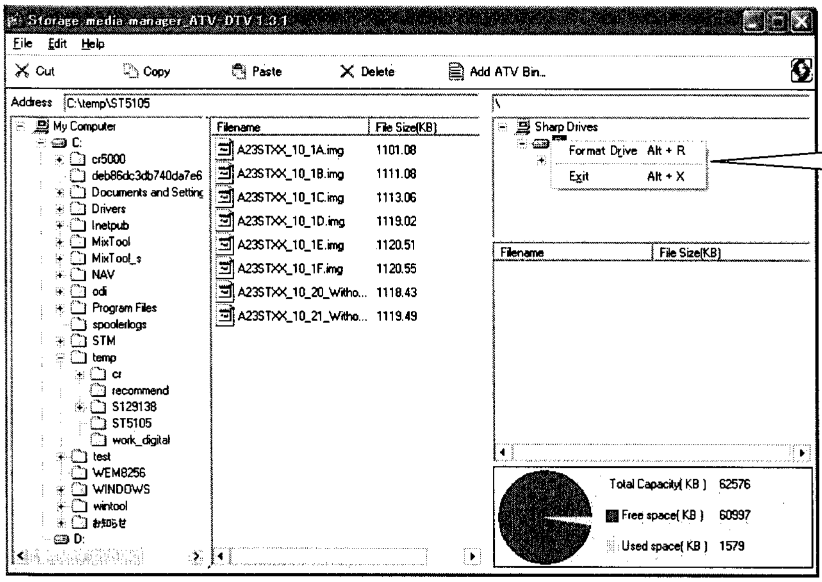

Storage media manager_ATV-DTV 1.3.1
File Edit Help
Cut
Copy
Paste
Delete
Add ATV Bin...
Address
My Computer
C:
cr5000
deb86dc3db740da7e6
Documents and Setting
Drivers
Inetpub
MixTool
MixTool_s
NAV
odi
Program Files
spoolerlogs
STM
temp
cr
recommend
S129138
ST5105
work_digital
test
WEM8256
WINDOWS
wintool
お知らせ
D:
Sharp Drives
E:
\
Filename
File Size(KB)

Address C:\temp\ST5105

Filename	File Size(KB)
A23STXX_10_1A.img	1101.08
A23STXX_10_1B.img	1111.08
A23STXX_10_1C.img	1113.06
A23STXX_10_1D.img	1119.02
A23STXX_10_1E.img	1120.51
A23STXX_10_1F.img	1120.55
A23STXX_10_20_Witho...	1118.43
A23STXX_10_21_Witho...	1119.49

Total Capacity(KB) 62576
Free space(KB) 60997
Used space(KB) 1579

3.Format the Drive


Storage media manager_ATV-DTV 1.3.1
File Edit Help
Cut
Copy
Paste
Delete
Add ATV Bin...
Address
My Computer
C:
cr5000
deb86dc3db740da7e6
Documents and Setting
Drivers
Inetpub
MixTool
MixTool_s
NAV
odi
Program Files
spoolerlogs
STM
temp
cr
recommend
S129138
ST5105
work_digital
test
WEM8256
WINDOWS
wintool
お知らせ
D:
\
Sharp Drives
Format Drive Alt + R
Exit Alt + X
Filename
File Size(KB)

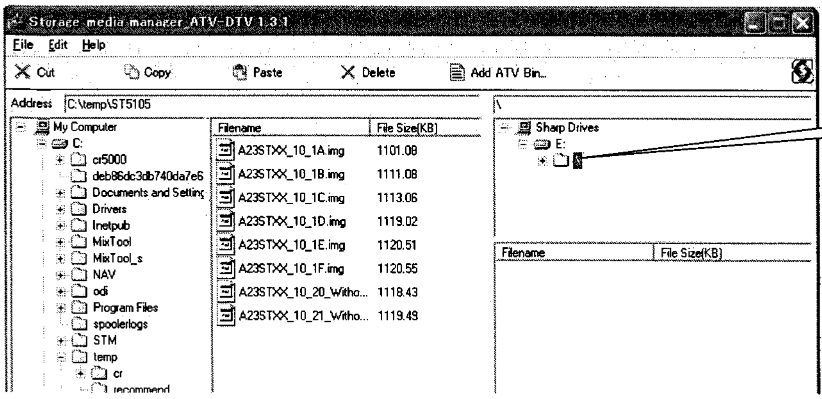
Address C:\temp\ST5105

Filename	File Size(KB)
A23STXX_10_1A.img	1101.08
A23STXX_10_1B.img	1111.08
A23STXX_10_1C.img	1113.06
A23STXX_10_1D.img	1119.02
A23STXX_10_1E.img	1120.51
A23STXX_10_1F.img	1120.55
A23STXX_10_20_Witho...	1118.43
A23STXX_10_21_Witho...	1119.49

Total Capacity(KB) 62576
Free space(KB) 60997
Used space(KB) 1579

Click the right button at E: drive(The drive that the media for PCMCIA update is inserted in.).
And , choose "Format Drive".

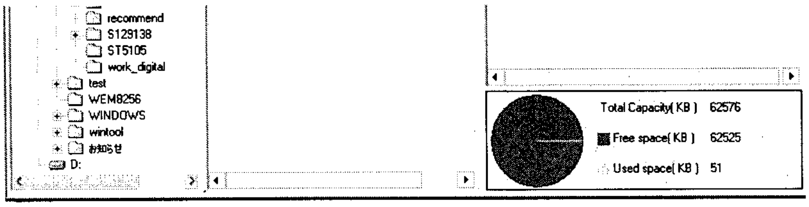
4.Choose folder


Storage media manager_ATV-DTV 1.3.1
File Edit Help
Cut
Copy
Paste
Delete
Add ATV Bin...
Address
My Computer
C:
cr5000
deb86dc3db740da7e6
Documents and Setting
Drivers
Inetpub
MixTool
MixTool_s
NAV
odi
Program Files
spoolerlogs
STM
temp
cr
recommend
\
Sharp Drives
E:
Filename
File Size(KB)

Address C:\temp\ST5105

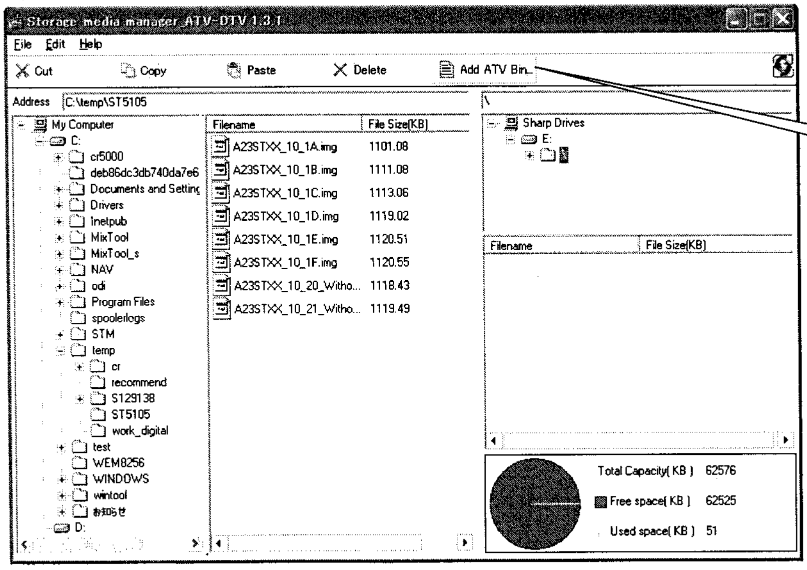
Filename	File Size(KB)
A23STXX_10_1A.img	1101.08
A23STXX_10_1B.img	1111.08
A23STXX_10_1C.img	1113.06
A23STXX_10_1D.img	1119.02
A23STXX_10_1E.img	1120.51
A23STXX_10_1F.img	1120.55
A23STXX_10_20_Witho...	1118.43
A23STXX_10_21_Witho...	1119.49

Choose this folder.


recommend
S129138
ST5105
work_digital
test
WEM8256
WINDOWS
wintool
お知らせ
D:

Total Capacity(KB) 62576
Free space(KB) 62525
Used space(KB) 51

5.Write ATV software
5-1)Choose "Add ATV Bin ..."


Storage media manager ATV-DTV 1.3.1
File Edit Help
Cut
Copy
Paste
Delete
Add ATV Bin...
My Computer
C:
cr5000
deb86dc3db740da7e6
Documents and Setting
Drivers
Inetpub
MixTool
MixTool_s
NAV
odi
Program Files
spoolerlogs
STM
temp
cr
recommend
S129138
ST5105
work_digital
test
WEM8256
WINDOWS
wintool
お知らせ
D:
Sharp Drives
E:

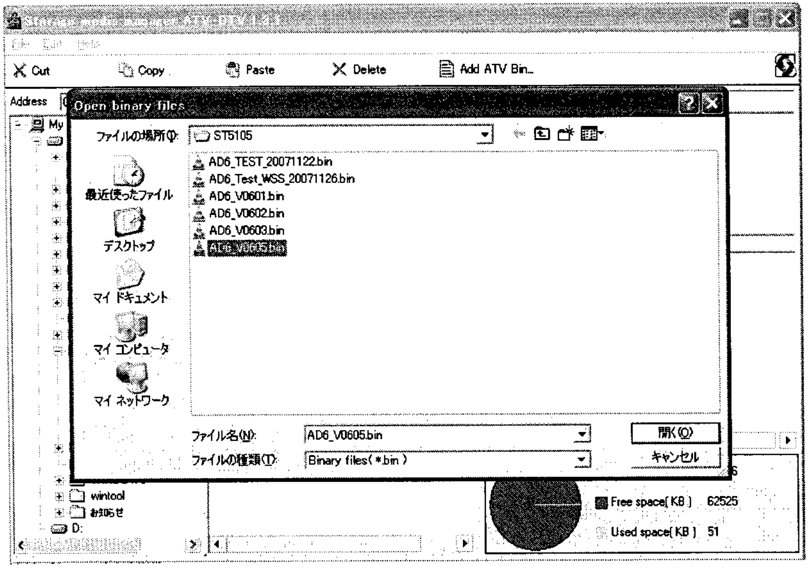
Address C:\temp\ST5105

Filename	File Size(KB)
A23STXX_10_1A.img	1101.08
A23STXX_10_1B.img	1111.08
A23STXX_10_1C.img	1113.06
A23STXX_10_1D.img	1119.02
A23STXX_10_1E.img	1120.51
A23STXX_10_1F.img	1120.55
A23STXX_10_20_Witho...	1118.43
A23STXX_10_21_Witho...	1119.49

Total Capacity(KB) 62576
Free space(KB) 62525
Used space(KB) 51

Choose "Add ATV Bin..."

5-2)Select the ATV software.(Sorry for displayed by Japanese.)


Storage media manager ATV-DTV 1.3.1
Cut
Copy
Paste
Delete
Add ATV Bin...
Open binary files
最近使ったファイル
デスクトップ
マイ ドキュメント
マイ コンピュータ
マイ ネットワーク
開く(O)
キャンセル
wintool
お知らせ
D:

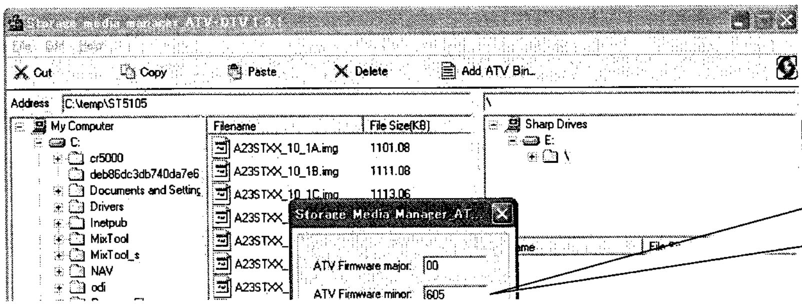
ファイルの場所(I): ST5105

- AD6_TEST_20071122.bin
- AD6_Test_WSS_20071126.bin
- AD6_V0601.bin
- AD6_V0602.bin
- AD6_V0603.bin
- AD6_V0605.bin

ファイル名(N): AD6_V0605.bin
ファイルの種類(T): Binary files(*.bin)

Free space(KB) 62525
Used space(KB) 51

5-3)Input "major code" and "minor code".

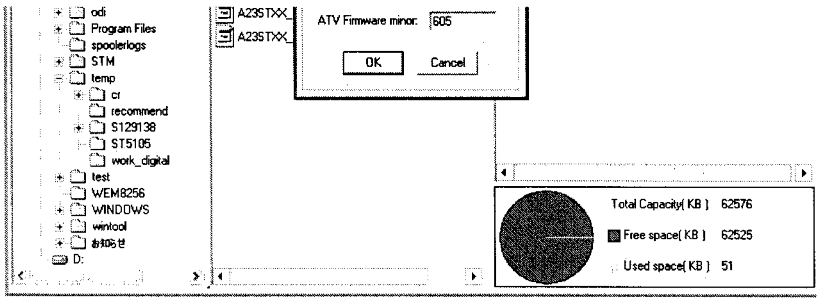

Storage media manager ATV-DTV 1.3.1
Cut
Copy
Paste
Delete
Add ATV Bin...
My Computer
C:
cr5000
deb86dc3db740da7e6
Documents and Setting
Drivers
Inetpub
MixTool
MixTool_s
NAV
odi
Sharp Drives
E:
Storage Media Manager AT...

Address C:\temp\ST5105

Filename	File Size(KB)
A23STXX_10_1A.img	1101.08
A23STXX_10_1B.img	1111.08
A23STXX_10_1C.img	1113.06

ATV Firmware major: 00
ATV Firmware minor: 605

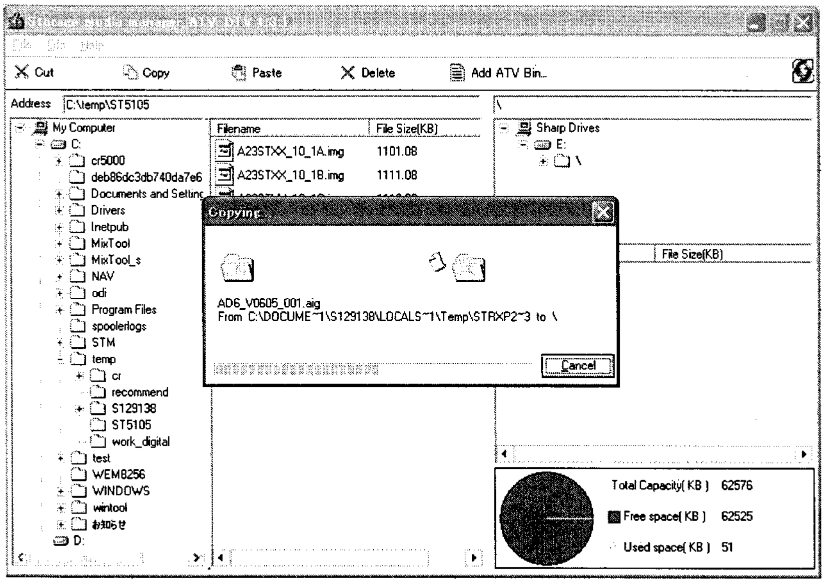
Input the "major code" and "minor" code.
—Ex.—
When you would like to write s/w version "0.605" , you should input as follows.
ATV Firmware major:00
ATV Firmware minor:605
And , press "OK".
———


odi
Program Files
spoolerlogs
STM
temp
cr
recommend
S129138
ST5105
work_digital
test
WEM8256
WINDOWS
wintool
D:
A23STXX_
A23STXX_
OK
Cancel

ATV Firmware minor: 605

Total Capacity(KB) 62576
Free space(KB) 62525
Used space(KB) 51

5-4)Wait for the finish.


Storage media manager_ATV-DTV 1.3.1
Cut
Copy
Paste
Delete
Add ATV Bin...
My Computer
C:
cr5000
deb86dc3db740da7e6
Documents and Settinc
Drivers
Inetpub
MixTool
MixTool_s
NAV
odi
Program Files
spoolerlogs
STM
temp
cr
recommend
S129138
ST5105
work_digital
test
WEM8256
WINDOWS
wintool
D:
Sharp Drives
E:
\
Copying...
Cancel

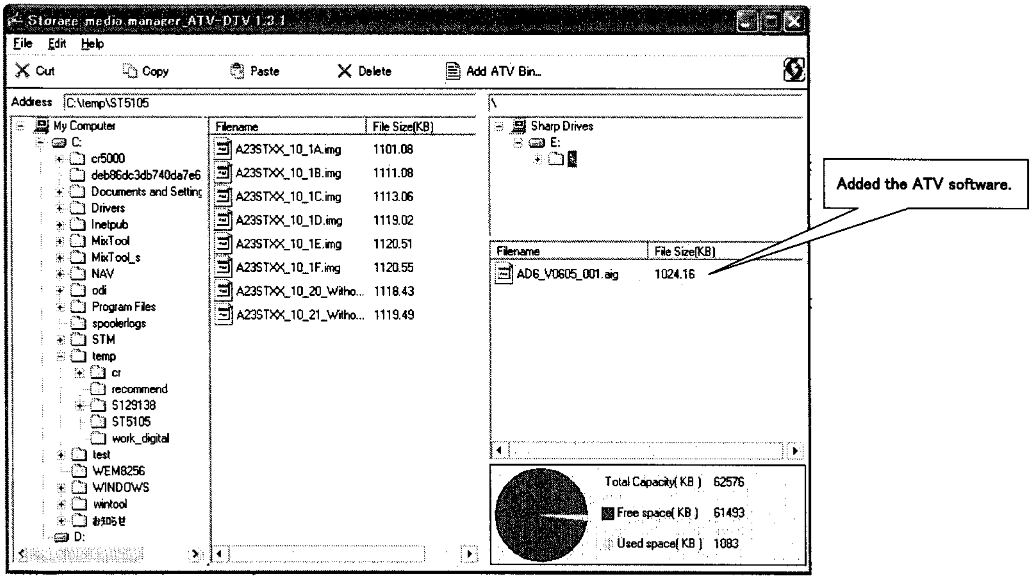
Address C:\temp\ST5105

Filename	File Size(KB)
A23STXX_10_1A.img	1101.08
A23STXX_10_1B.img	1111.08

AD6_V0605_001.aig
From C:\DOCUME~1\S129138\LOCALS~1\Temp\STRXP2~3 to \

Total Capacity(KB) 62576
Free space(KB) 62525
Used space(KB) 51

5-5)ATV software writing is succesed.


Storage media manager_ATV-DTV 1.3.1
File
Edit
Help
Cut
Copy
Paste
Delete
Add ATV Bin...
My Computer
C:
cr5000
deb86dc3db740da7e6
Documents and Setting
Drivers
Inetpub
MixTool
MixTool_s
NAV
odi
Program Files
spoolerlogs
STM
temp
cr
recommend
S129138
ST5105
work_digital
test
WEM8256
WINDOWS
wintool
D:
Sharp Drives
E:
Added the ATV software.

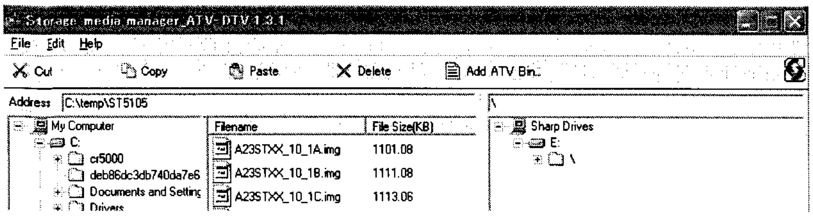
Address C:\temp\ST5105

Filename	File Size(KB)
A23STXX_10_1A.img	1101.08
A23STXX_10_1B.img	1111.08
A23STXX_10_1C.img	1113.06
A23STXX_10_1D.img	1119.02
A23STXX_10_1E.img	1120.51
A23STXX_10_1F.img	1120.55
A23STXX_10_20_Witho...	1118.43
A23STXX_10_21_Witho...	1119.49

Filename	File Size(KB)
AD6_V0605_001.aig	1024.16

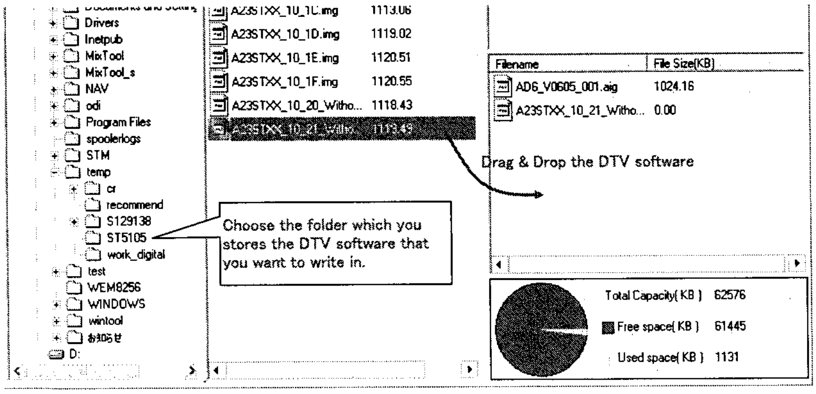
Total Capacity(KB) 62576
Free space(KB) 61493
Used space(KB) 1083

6.Write DTV software
6-1)Choose folder and "drag and drop" the DTV software.


Storage media manager_ATV-DTV 1.3.1
File
Edit
Help
Cut
Copy
Paste
Delete
Add ATV Bin...
My Computer
C:
cr5000
deb86dc3db740da7e6
Documents and Setting
Drivers
Sharp Drives
E:
\

Address C:\temp\ST5105

Filename	File Size(KB)
A23STXX_10_1A.img	1101.08
A23STXX_10_1B.img	1111.08
A23STXX_10_1C.img	1113.06


Drivers
Inetpub
MixTool
MixTool_s
NAV
odi
Program Files
spoolerlogs
STM
temp
cr
recommend
S129138
ST5105
work_digital
test
WEM8256
WINDOWS
wintool
D:
Filename
File Size(KB)
Total Capacity(KB) 62576
Free space(KB) 61445
Used space(KB) 1131

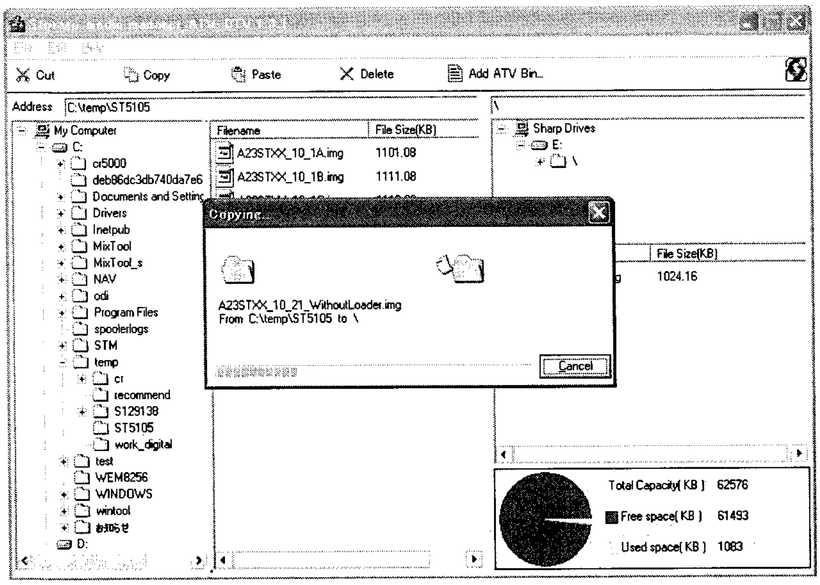
Filename	File Size(KB)
A23STXX_10_1C.img	1113.06
A23STXX_10_1D.img	1119.02
A23STXX_10_1E.img	1120.51
A23STXX_10_1F.img	1120.55
A23STXX_10_20_Witho...	1118.43
A23STXX_10_21_Witho...	1119.49

Filename	File Size(KB)
AD6_V0605_001.aig	1024.16
A23STXX_10_21_Witho...	0.00

Drag & Drop the DTV software

Choose the folder which you stores the DTV software that you want to write in.

6-2)Wait for the finish.


Storage media manager ATV-DTV 1.3.1
File Edit Help
Cut
Copy
Paste
Delete
Add ATV Bin..
My Computer
C:
cr5000
deb86dc3db740da7e6
Documents and Setting
Drivers
Inetpub
MixTool
MixTool_s
NAV
odi
Program Files
spoolerlogs
STM
temp
cr
recommend
S129138
ST5105
work_digital
test
WEM8256
WINDOWS
wintool
D:
Sharp Drives
E:
\
Copying...
Cancel
Total Capacity(KB) 62576
Free space(KB) 61493
Used space(KB) 1083

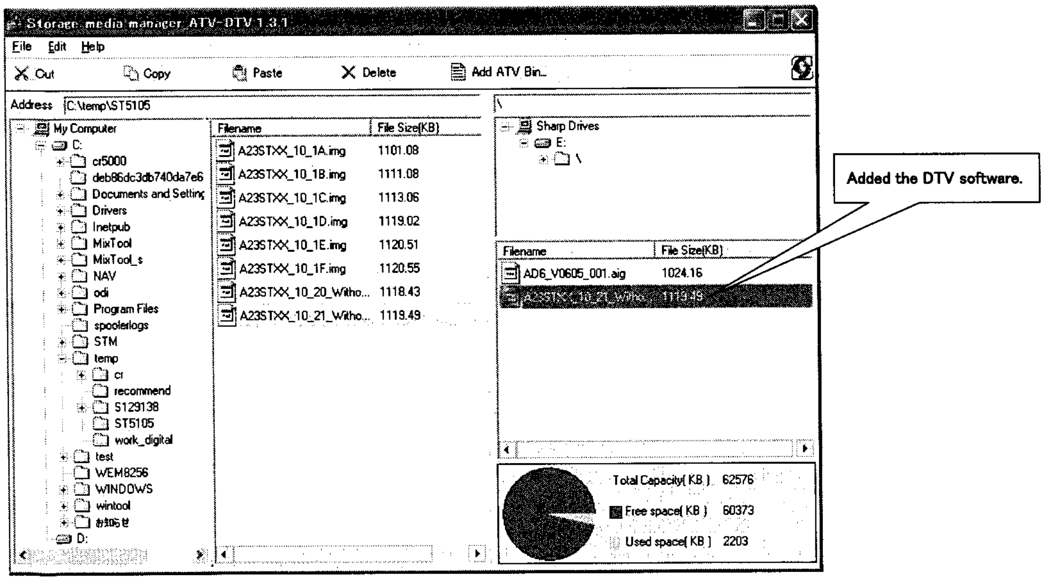
Address C:\temp\ST5105

Filename	File Size(KB)
A23STXX_10_1A.img	1101.08
A23STXX_10_1B.img	1111.08

File Size(KB)
1024.16

A23STXX_10_21_WithoutLoader.img
From C:\temp\ST5105 to \

6-3)DTV software writing is succesed.


Storage media manager ATV-DTV 1.3.1
File Edit Help
Cut
Copy
Paste
Delete
Add ATV Bin..
My Computer
C:
cr5000
deb86dc3db740da7e6
Documents and Setting
Drivers
Inetpub
MixTool
MixTool_s
NAV
odi
Program Files
spoolerlogs
STM
temp
cr
recommend
S129138
ST5105
work_digital
test
WEM8256
WINDOWS
wintool
D:
Sharp Drives
E:
\
Total Capacity(KB) 62576
Free space(KB) 60373
Used space(KB) 2203

Address C:\temp\ST5105

Filename	File Size(KB)
A23STXX_10_1A.img	1101.08
A23STXX_10_1B.img	1111.08
A23STXX_10_1C.img	1113.06
A23STXX_10_1D.img	1119.02
A23STXX_10_1E.img	1120.51
A23STXX_10_1F.img	1120.55
A23STXX_10_20_Witho...	1118.43
A23STXX_10_21_Witho...	1119.49

Filename	File Size(KB)
AD6_V0605_001.aig	1024.16
A23STXX_10_21_Witho...	1119.49

Added the DTV software.

7)Choose "File" —> "Exit" (finish the StorageMediaManager_ATV-DTV 1.3.1)

Finish

[3] Entering and exiting the adjustment process mode

1) Unplug the AC power cord of running TV set to force off the power.
2) While holding down the "VOL (-)" and "INPUT" keys on the set at once, plug in the AC power cord to turn on the power.
   The letter appears on the screen.
3) Next, hold down the "VOL (-)" and "P(∨)" keys on the set at once.
   Multiple lines of orange characters appearing on the screen indicate that the set is now in the adjustment Process mode.
   If you fail to enter the adjustment process mode (the display is the same as normal startup), retry the procedure.
4) To exit the adjustment process mode after the adjustment is done, unplug the AC power cord to force off the power. (When the power is turned off with the remote controller, once unplug the AC power cord and plug it in again. In this case, wait 10 seconds or so before plugging.)

Caution: Use due care in handling the information described here lest the users should know how to enter the adjustment process mode.
If the settings are tampered with in this mode, unrecoverable system damage may result.

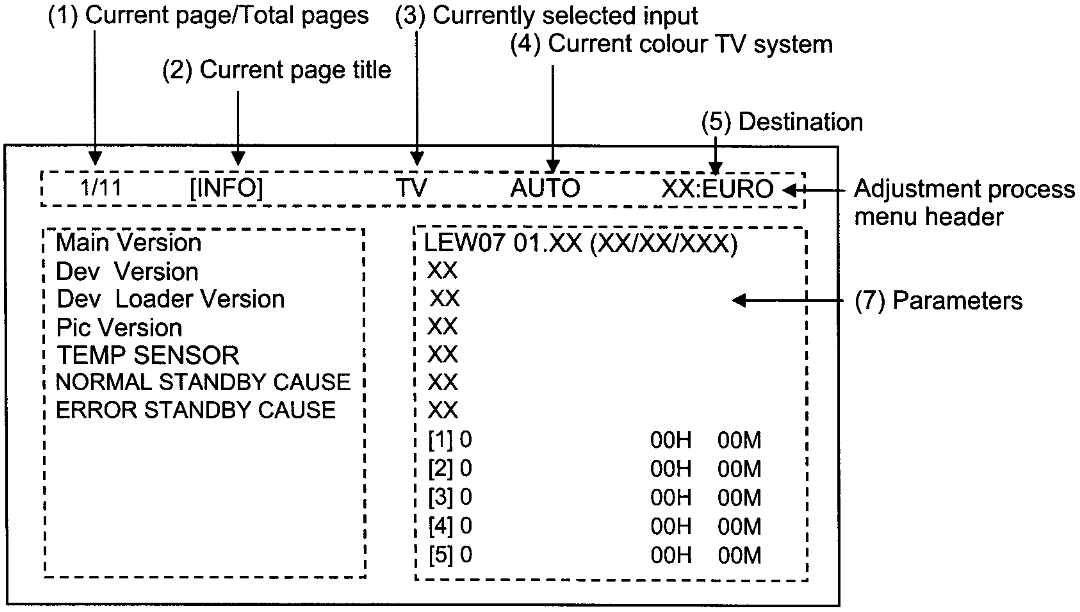
[4] Remote controller key operation and description of display in adjustment process mode.

1. key operation

Remote controller key	Main unit key	Function
P (∧/∨)	P (∧/∨)	Moving an item (line) by one (UP/DOWN)
⊿ (+/–)	⊿ (+/–)	Changing a selected line setting (+1/-1)
Cursor (▲/▼)	————	Turning a page (PREVIOUS/NEXT)
Cursor (◀/▶)	————	Changing a selected line setting (+10/-10)
⇥ Input button on remote controller	⇥ Input button	Input source switching (toggle switching) (TV→DTV→EXT1→EXT2→EXT3→EXT4→EXT5→EXT6)
OK	————	Executing a function

* Input mode is switched automatically when relevant adjustment is started so far as the necessary input signal is available.

2. Description of display


(1) Current page/Total pages
(3) Currently selected input
(4) Current colour TV system
(2) Current page title
(5) Destination
Adjustment process menu header
(7) Parameters

```
1/11    [INFO]              TV      AUTO      XX:EURO

Main Version                 LEW07 01.XX (XX/XX/XXX)
Dev Version                  XX
Dev Loader Version           XX
Pic Version                  XX
TEMP SENSOR                  XX
NORMAL STANDBY CAUSE         XX
ERROR STANDBY CAUSE          XX
                             [1] 0          00H   00M
                             [2] 0          00H   00M
                             [3] 0          00H   00M
                             [4] 0          00H   00M
                             [5] 0          00H   00M
```

[5] Adjustment process mode menu

The character string in brackets [ ] will appear as a page title in the adjustment process menu header.

Page	Line	Item	Description	Remarks (adjustment detail, etc.)
1/11		[INFO]		
	1	Main Version	LEW07 01XX(XX/XX0/XX)	Main microprocessor version
	2	Dev Version	XX	DTV microprocessor version
	3	Dev Loader Version	XX	DTV microprocessor-Loader version
	4	Pic Version	xxxxxx	Pic MICON version
	5	TEMP SENSOR	xxxxxx	
	6	NORMAL STANDBY CAUSE	RC_STANDBY	
	7	ERROR STANDBY CAUSE	[1] 00H 00M [2] 00H 00M [3] 00H 00M [4] 00H 00M [5] 00H 00M	Error standby cause Total operating time before error
2/11		[INIT]		
	1	Factory Init	[EURO/RUSSIA/SWEDEN]	Initialization to factory settings execution
	2	Inch Setting	XX	Inch present setting
	3	Public Mode	OFF/ON	HOTEL MODE flag setting
	4	Center Acutime	xxH xxM	Main operating hours
	5	RESET	OFF/ON	Main operating hours reset
	6	Backlight Acutime	xxH xxM	Backlight operating hours
	7	RESET	OFF/ON	Backlight operating hours reset
	8	Picture Read Pos X	0-xxx	x-axis setting of picture data
	9	Picture Read Pos Y	0-xxx	y-axis setting of picture data
	10	Picture Read	ON/OFF	Start/stop of picture data
3/11		[PAL.SECAM.N358]		
	1	RF-AGC ADJ	ENTER	RF-AGC auto adjustment execution
	2	PAL+TUNER ADJ	ENTER	PAL TUNER auto adjustment execution
	3	PAL ADJ	ENTER	PAL auto adjustment execution
	4	TUNER ADJ	ENTER	TUNER auto adjustment execution
	5	CONTRAST SD	32	PAL contrast adjustment
	6	SECAM CB OFFSET	1	SECAM offset adjustment
	7	SECAM CR OFFSET	1	SECAM offset adjustment
	8	TUNER A DAC	32	TUNER DAC adjustment
	9	RF AGC	16	RF AGC adjustment
4/11		[COMP 15K]		
	1	COMP 15K ADJ	ENTER	COMP15K auto adjustment execution
	2	COMP 15K CONTRAST	40	Contrast adjustment
5/11		[HDTV]		
	1	HDTV CONTRAST	41	HDTV Contrast adjustment
6/11		[SMPTE]		
	1	RF-AGC ADJ	ENTER	RF-AGC auto adjustment execution
	2	PAL-AGC ADJ	ENTER	PAL AGC auto adjustment execution
	3	PAL ADJ	ENTER	PAL auto adjustment execution
	4	TUNER ADJ	ENTER	TUNER auto adjustment execution
	5	CONTRAST SD	30	PAL contrast adjustment
	6	SECAM CB OFFSET	1	SECAM offset adjustment
	7	SECAM CR OFFSET	1	SECAM offset adjustment
	8	TUNER A DAC	36	TUNER DAC adjustment
	9	RF AGC	16	RF AGC adjustment
7/11		[M GAMMA INFO]		
	1	M GAMMA IN 1	160	W/B adjustment, gradation 1 input setting
	2	M GAMMA IN 2	320	W/B adjustment, gradation 2 input setting
	3	M GAMMA IN 3	480	W/B adjustment, gradation 3 input setting
	4	M GAMMA IN 4	640	W/B adjustment, gradation 4 input setting
	5	M GAMMA IN 5	800	W/B adjustment, gradation 5 input setting
	6	M GAMMA IN 6	960	W/B adjustment, gradation 6 input setting
	7	M GAMMA WRITE	OFF/ON	EEP writing of adjustment values
	8	M GAMMA RESET	OFF/ON	Initialization of adjustment values

Page	Line	Item	Description	Remarks (adjustment detail, etc.)
8/11		[M GAMMA 1-3]		
	1	M GAMMA R 1	0	W/B adjustment, gradation 1R adjustment value
	2	M GAMMA G 1	0	W/B adjustment, gradation 1G adjustment value
	3	M GAMMA B 1	0	W/B adjustment, gradation 1B adjustment value
	4	M GAMMA R 2	0	W/B adjustment, gradation 2R adjustment value
	5	M GAMMA G 2	0	W/B adjustment, gradation 2G adjustment value
	6	M GAMMA B 2	0	W/B adjustment, gradation 2B adjustment value
	7	M GAMMA R 3	0	W/B adjustment, gradation 3R adjustment value
	8	M GAMMA G 3	0	W/B adjustment, gradation 3G adjustment value
	9	M GAMMA B 3	0	W/B adjustment, gradation 3B adjustment value
	10	M GAMMA WRITE	OFF/ON	EEP writing of adjustment values
9/11		[M GAMMA 4-6]		
	1	M GAMMA R 4	0	W/B adjustment, gradation 4R adjustment value
	2	M GAMMA G 4	0	W/B adjustment, gradation 4G adjustment value
	3	M GAMMA B 4	0	W/B adjustment, gradation 4B adjustment value
	4	M GAMMA R 5	0	W/B adjustment, gradation 5R adjustment value
	5	M GAMMA G 5	0	W/B adjustment, gradation 5G adjustment value
	6	M GAMMA B 5	0	W/B adjustment, gradation 5B adjustment value
	7	M GAMMA R 6	0	W/B adjustment, gradation 6R adjustment value
	8	M GAMMA G 6	0	W/B adjustment, gradation 6G adjustment value
	9	M GAMMA B 6	0	W/B adjustment, gradation 6B adjustment value
	10	M GAMMA WRITE	OFF/ON	EEP writing of adjustment values
10/11		[ETC]		
	1	EEP CLEAR	OFF/ON	Clear of all adjustment value
	2	EEP CLEAR B	OFF/ON	Clear of adjustment value of B mode
	3	STANDBYCAUSE RESET	OFF/ON	Reset of STANDBY CAUSE
	4	AUTO INSTALLATION SW	0/1	1: * * * 0: * * *
	5	OPTION	0	
	6	COUNTRY	AUTO/EURO/UK	Destination setting
	7	L ERR RESET	0	LAMP ERR RESET Initializatio of L_ERR
	8	L ERR STOP	0/1	LAMP ERR Inhibit L_LRR detection
	9	DTV CLR	ENTER	Clear of DTV setting
	10	I2C-OFF	ENTER	I2C DATA execution
11/11		[COM-BIAS]		
	1	VCOM ADJ	63	INVERTER drive frequency setting
	2	TEST PATTERN	0	INVERTER drive frequency setting

[6] Special features

* ERROR STANDBY CAUSE (Page 1/11)

  The total time when the unit enters the standby due to operational error and cause of error are recorded on EEPROM as much as possible. The values can be used to locate the fault for repair.

* EEP CLEAR (Page10/11)

  Clear of process adjustment EEP value.

[7] Video signal adjustment procedure

* The adjustment process mode menu is listed in Section 5.

1. Signal check

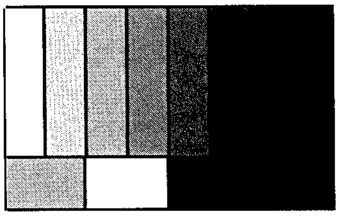
1. Signal generator level adjustment check (Adjustment to the specified level)

- Composite signal PAL : 0.7Vp-p ±0.02Vp-p (Pedestal to white level)
- 15K component signal (50 Hz) : Y level 0.7Vp-p ±0.02Vp-p (Pedestal to white level)
  PB, PR level 0.7Vp-p ±0.02Vp-p

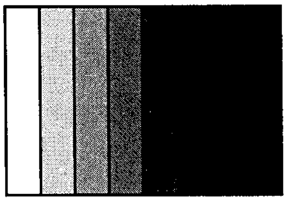
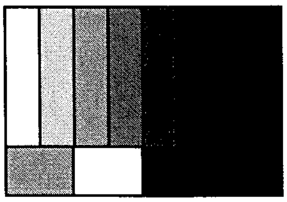
2. Entering the adjustment process mode

1. Enter the adjustment process mode according to Section 3.

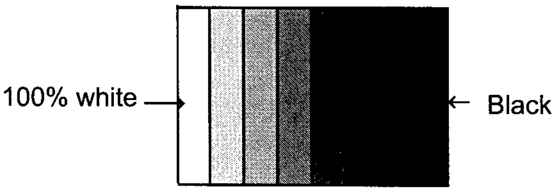
3. RF AGC adjustment

	Adjustment point	Adjustment Conditions	Adjustment procedure
1	Setting	[Signal] PAL Sprit Field Colour Bar RF signal UV [Terminal] TUNER	• Feed the PAL Sprit Field colour bar signal to TUNER. Signal level: 55 dB µV +1dB, -1dB (75Ω LOAD) [E-12CH]  ↑ 100% white
2	Auto adjustment performance	Adjustment process Page3	Bring the cursor on [■ RF AGC ADJ] and press [OK] [***OK***] appears when finished.

4. PAL signal & tuner adjustment

	Adjustment point	Adjustment Conditions	Adjustment procedure
1	Setting	[Signal] PAL Full Field Colour Bar Composite or RF signal [Terminal] EXT1 SCART IN TUNER	• Feed the PAL full field colour bar signal (75% colour saturation) to EXT1 SCART IN. • Feed the RF signal (PAL colour bar) to TUNER. • Make sure the PAL colour bar pattern has the sync level of 7:3 with the picture level. [VIDEO IN SIGNAL]  ↑ 100% white [RF Signal]  ↑ 100% white
2	Auto adjustment performance	Adjustment process Page3	Bring the cursor on [■ PAL + TUNER ADJ] and press [OK] [***OK***] appears when finished.

5. ADC adjustment (Component 15K)

	Adjustment point	Adjustment Conditions	Adjustment procedure
1	Setting	[Signal] COMP15K, 50Hz 100% Full Field Colour Bar [Terminal] EXT5 COMPONENT IN	- Feed the COMPONENT 15K 100% full field colour bar signal (100% colour saturation) to EXT5 COMPONENT IN. 
2	Auto adjustment performance	Adjustment process Page4	Bring the cursor on [■ COMP15K ADJ] and press [OK] [***OK***] appears when finished.

[8] White Balance Adjustment

Adjustment gradation values (IN) appear on page 7/11 of process adjustment, and adjustment initial values (offset value) appear on pages 8/11 and 9/11. For white balance adjustment, adjust the offset values on pages 8/11 and 9/11.

[Condition of the unit for inspection] Modulated light: MAX (+8)

[Adjustment reference device] Minolta CA-210

[Adjustment]

Check that the values on page 7/11 of process adjustment are set as below. If not, change them accordingly.

M GAMMA IN 1	160	M GAMMA IN 2	320
M GAMMA IN 3	480	M GAMMA IN 4	640
M GAMMA IN 5	800	M GAMMA IN 6	960

1) Display the current adjustment status at point 6. (Page 8/11 of process adjustment)

   The display for checking the adjustment status is toggled by pressing the "6" button on the remote control.

   (Normal OSD display → "6" → display for check (OSD disappears) → "6" →normal OSD display → • • •)

2) Read the value of the luminance meter.

3) Change M GAMMA R6/M GAMMA B6 (Adjustment offset value) on page 9/11 of process adjustment so that the values of the luminance meter approach x = 0.272 and y = 0.277.

   (Basically, G is not changed. If adjustment fails with R and B, change G. When G is lowered, the weaker of R and B must be fixed.)

4) If G is changed in step 3), change the values of M GAMMA G1-M GAMMA G5 on pages 8/11 and 9/11 of process adjustment as follows. When not changed, go to step5).

   Offset value of M GAMMA G1 = (Offset value of M GAMMA G6) * (160/960)

   Offset value of M GAMMA G2 = (Offset value of M GAMMA G6) * (320/960)

   Offset value of M GAMMA G3 = (Offset value of M GAMMA G6) * (480/960)

   Offset value of M GAMMA G4 = (Offset value of M GAMMA G6) * (640/960)

   Offset value of M GAMMA G5 = (Offset value of M GAMMA G6) * (800/960)

5) Display the adjustment status of the current point 5. (Each time the "5" button on the remote control is pressed, the adjustment status check display is toggled.)

   (Normal OSD display → "5" → Check display (OSD disappears) → "5" → Normal OSD display → • • •)

   Change M GAMMA R5/M GAMMA B5 (adjustment offset value) on page 9/11 of process adjustment so that the values of the luminance meter approach x = 0.272 and y = 0.277.

6) Repeat step 5) for points 4, 3, 2, and 1.

[Adjustment reference standard value]

Adjustment spec	±0.004	Inspection spec	±0.006 (point 1)
Adjustment spec	±0.002	Inspection spec	±0.004 (Excluding the above-mentioned)

[9] Adjusting procedure by use of [RS-232C]

1) Get ready the PC with COM port (RS-232C) running on Windows 95/98/ME/2000/XP operating system, as well as the RS-232C cross cable.
2) Start the unit with the RS-232C cable connected.
3) Start the terminal software. (The freeware readily available on the Internet will do.)
4) Make the following settings.

Baud rate	9,600 bps
Data LENGTH	8 bit
Parity bit	None
Stop bit	1 bit
Flow control	None

5) If the settings are correct, the terminal software indicates "ERR" against pressing of the "ENTER" key.
6) After the settings are done correctly, it is possible to make an adjustment by typing in the command shown in the table below and pressing the "ENTER" key on the keyboard.
7) Command entry is successful if the terminal software indicates "OK" when the "ENTER" is pressed. If "ERR" is shown, retry to enter the command.
8) Send the process mode switching command to switch from the RS232C operation mode to the process mode.

   KRSW0001: "ERR" is returned.

   KKT10037: When "OK" is returned, the process mode becomes active. When "ERR", start over from KRSW0001.
9) Send each adjustment command.

RS-232C command list

Command	Function	Remarks
KYOF0000	Remote control disabled	
OSDS0001	OSD display inhibited	
SBSL0016	Light control level MAX	
MSET0001	Background adjustment start	
MSET0004	Initialization of adjustment value	
LEV60928	Gradation 6 (928-gradation adjustment)	
MG6G ****	Adjustment of G of gradation 6	0000 ~4095
MG6R ****	Adjustment of R of gradation 6	0000 ~ 4095
MG6B ****	Adjustment of B of gradation 6	0000 ~ 4095
LEV50800	Gradation 5 (800-gradation adjustment)	
MG5G ****	Input of G of gradation 5	Calculated value
MG5R ****	Input of R of gradation 5	0000 ~4095
MG5B ****	Input of B of gradation 5	0000 ~ 4095
LEV40656	Gradation 4 (656-gradation adjustment)	
MG4G ****	Input of G of 4	Calculated value
MG4R ****	Input of R of 4	0000 ~4095
MG4B ****	Input of B of 4	0000 ~ 4095
LEV30528	Gradation 3 (528-gradation adjustment)	
MG3G ****	Input of G of 3	
MG3R****	Input of R of 3	0000 ~ 4095
MG3B ****	Input of B of 3	0000 ~ 4095
LEV20352	Gradation 2 (352-gradation adjustment)	Calculated value
MG2G ****	Input of G of 2	0000 ~ 4095
MG2R ****	Input of R of 2	0000 ~ 4095
MG2B ****	Input of B of 2	0000 ~ 4095
LEV10184	Gradation 1(176-gradation adjustment)	
MG1G ****	Input of G of 1	Calculated value
MG1R ****	Input of R of 1	0000 ~ 4095
MG1B ****	Input of B of 1	0000 ~ 4095
MSET0003	Writing of adjustment value	

[10] Initialization to factory settings

Caution: When the factory settings have been made, all user setting data, including the channel settings, are initialized. (The adjustments done in the adjustment process mode are not initialized.) Keep this in mind when initializing these settings.

	Adjustment item	Adjustment conditions	Adjustment procedure
1	Factory settings	Forcibly turn off the power (See to below caution)	• Enter the adjustment process mode. • Move the cursor to [Factory Init] on page 2/11. • Use the R/C key to select a destination [EURO/RUSSIA/ SWEDEN]. And, press the [OK] key. • "EXECUTING..." appears and initialization starts. • After a while, "*** OK ***" appears and the setting is complete. NOTE: **Never turn the power off during initialization.**
			When performing factory settings (while displaying page 2 of adjustment process), confirm that the item "Inch Setting" or the panel size displayed in the upper right corner corresponds to each panel size.
			The following settings will be back to their factory ones. 1. User settings 2. Channel data (e.g. broadcast frequencies) 3. Maker option setting 4. Password data

After adjustments, exit the adjustment process mode.
To exit the adjustment process mode, unplug the AC power cord from the outlet to forcibly turn off the power.
When the power is turned off with the remote control, unplug the AC power cord and plug it back in (wait approximately 10 seconds before plugging in the AC power cord)

[11] Lamp error detection

1. Function description

This LCD colour television has a function (lamp error detection) to be turned OFF automatically for safety when the lamp or lamp circuit is abnormal

If the lamp or lamp circuit is abnormal, or some other errors happen, and the lamp error detection is executed, the following occur.

1- The main unit of television is turned OFF 5 seconds after it is turned ON. (The power LED on the front side of TV turns from green to red.)

2 - If the situation "1" happens 5 times sequentially, the power is turned on (relay is turned ON).
However, the backlight is not turned on, and then the relay is turned OFF after 5 to 6 seconds. (The power LED turns from green to red.)

2. Countermeasures

When television is turned OFF by the lamp error detection mentioned above, it enters the adjustment process with the power LED red. Entering the adjustment process turns OFF the error detection and turns ON TV. This enables the operation check to detect errors in the lamp or lamp circuit

Check whether "L ERROR RESET" on point 7, page 10/11 of the adjustment process is 1 or more. If it is 1 or more, it indicates the lamp error detection was executed. After confirming that the lamp or lamp circuit is normal, reset the lamp error counter pushing "OK" in the R/C. After resetting counter the label "***OK***" appears on Screen.

3. Reset standby cause error list

After confirming that the lamp error counter has been erased, select "STAND BY CAUSE RESET" on point 3, page 10/11 of the adjustment process and select ON using the right cursor. For execute press "OK" in the R/C and the label "***OK***" appears on Screen.

[12] Public Mode (Hotel Mode)

1. How to Enter in the Public Mode (Hotel Mode).

Turn on the power and enter in the Adjustment Process mode as usual.

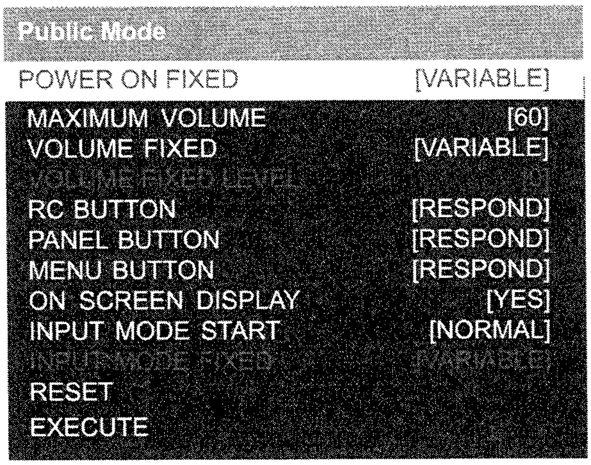
In the [INIT], Page 2/11 of Service, turns ON the Public Mode option.

Turn off TV by pressing Main Power switch.

While pressing "VOL+" and "INPUT" keys at the same time, press Main Power switch for more than 2 seconds.

Then, when you are asked for the password, enter "027".

After this sequence the TV will turn on showing the Public Mode setting screen as follows:



Public Mode

POWER ON FIXED [VARIABLE]

MAXIMUM VOLUME [60]

VOLUME FIXED [VARIABLE]

VOLUME FIXED LEVEL [0]

RC BUTTON [RESPOND]

PANEL BUTTON [RESPOND]

MENU BUTTON [RESPOND]

ON SCREEN DISPLAY [YES]

INPUT MODE START [NORMAL]

INPUT MODE FIXED [VARIABLE]

RESET

EXECUTE

Is possible to select each item of function by pressing cursor UP/DOWN keys on the remote control or CH(∧)(∨) keys on the LCD TV. (Except DTV)

The setting position of each item of functions is made by pressing cursor RIGHT/LEFT keys on the remote control or VOL (+) / (-) keys on the LCD TV.

Select EXECUTE position after you set all function, and press cursor RIGHT/LEFT keys on the remote control or VOL (+) / (-) keys on the LCD TV for confirmation.

2. Public Mode Settings.

1. POWER ON FIXED [VARIABLE ⟷ FIXED]

   When it is set to "FIXED" the TV is impossible to be switch off by Main Switch or Remote Control.

2. MAXIMUM VOLUME [0 ⟷ 60]

   Is possible to set the maximum volume at limited level.

3. VOLUME FIXED [VARIABLE ⟷ FIXED]

   Is possible to fix the sound volume at limited level.

   When "FIXED" is selected the sound volume before limited is fixed.

4. VOLUME FIXED LEVEL [0 ⟷ 60]

   If "FIXED" has been selected, is possible to set a fixed volume at the level that is chosen.

5. RC BUTTON [RESPOND ⟷ NO RESPOND]

   If "NO RESPOND" is selected, the remote control keys are inoperative.

6. PANEL BUTTON [RESPOND ⟷ NO RESPOND]

   If "NO RESPOND" has been selected, the set's keys remain deactivated (Except POWER key).

7. MENU BUTTON [RESPOND ⟷ NO RESPOND]

   If "NO RESPOND" has been selected, "MENU" key, of remote control, is inoperative.

8. ON SCREEN DISPLAY [YES ⟷ NO]

   If "NO" has been selected, the On Screen Display does not appear.

9. INPUT MODE START [NORMAL → TV (X) →DTV→ INPUT1 → INPUT2 → INPUT3 → INPUT4 → INPUT5]

   When any other item than "NORMAL" has been selected, the sets will start in a selected input mode at the next power-on.

10. INPUT MODE FIXED [VARIABLE → FIXED]

    "FIXED" has been selected, any channels and input modes other than those selected at the start mode cannot be picked up.

11. RESET

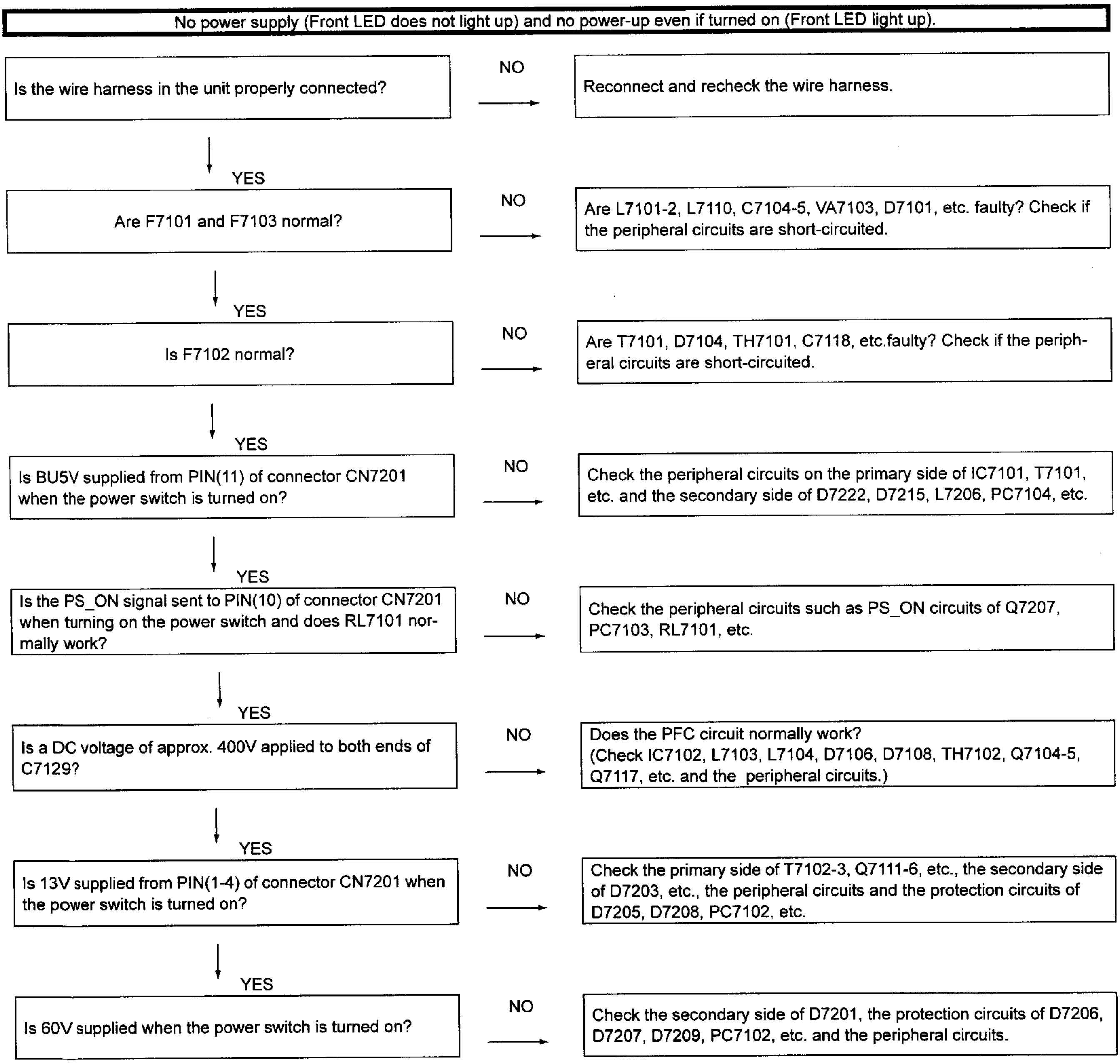
Cancel all Public Mode settings. (It returns to the factory settings)

12. EXECUTE

Select this item, and press cursor RIGHT / LEFT keys on the remote control or VOL (+) / (-) keys on the LCD TV for confirmation the functions settings.

CHAPTER 4. TROUBLE SHOOTING TABLE

[1] TROUBLE SHOOTING TABLE



No power supply (Front LED does not light up) and no power-up even if turned on (Front LED light up).

Is the wire harness in the unit properly connected?

Reconnect and recheck the wire harness.

Are F7101 and F7103 normal?

Are L7101-2, L7110, C7104-5, VA7103, D7101, etc. faulty? Check if the peripheral circuits are short-circuited.

Is F7102 normal?

Are T7101, D7104, TH7101, C7118, etc.faulty? Check if the peripheral circuits are short-circuited.

Is BU5V supplied from PIN(11) of connector CN7201 when the power switch is turned on?

Check the peripheral circuits on the primary side of IC7101, T7101, etc. and the secondary side of D7222, D7215, L7206, PC7104, etc.

Is the PS_ON signal sent to PIN(10) of connector CN7201 when turning on the power switch and does RL7101 normally work?

Check the peripheral circuits such as PS_ON circuits of Q7207, PC7103, RL7101, etc.

Is a DC voltage of approx. 400V applied to both ends of C7129?

Does the PFC circuit normally work?
(Check IC7102, L7103, L7104, D7106, D7108, TH7102, Q7104-5, Q7117, etc. and the peripheral circuits.)

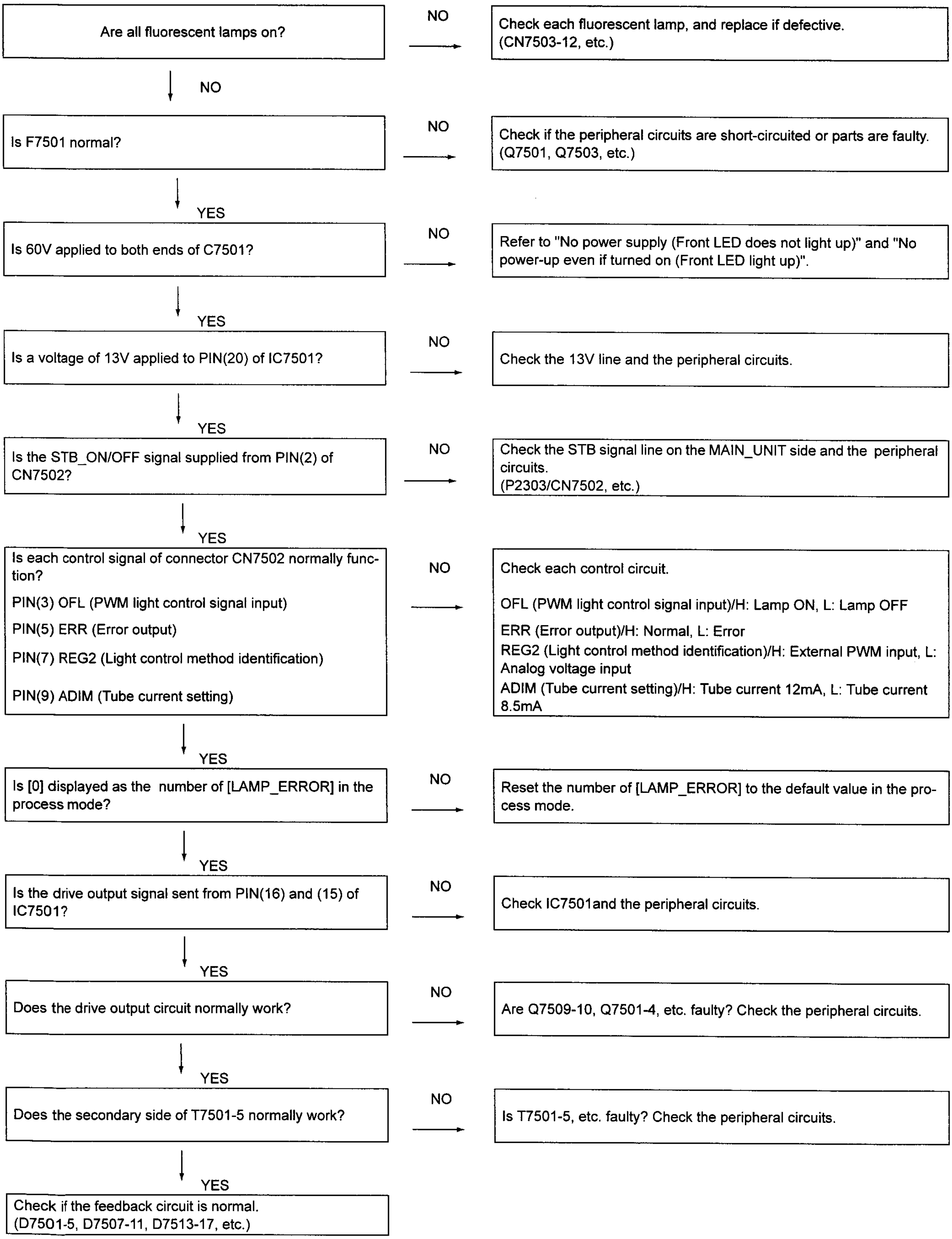
Is 13V supplied from PIN(1-4) of connector CN7201 when the power switch is turned on?

Check the primary side of T7102-3, Q7111-6, etc., the secondary side of D7203, etc., the peripheral circuits and the protection circuits of D7205, D7208, PC7102, etc.

Is 60V supplied when the power switch is turned on?

Check the secondary side of D7201, the protection circuits of D7206, D7207, D7209, PC7102, etc. and the peripheral circuits.

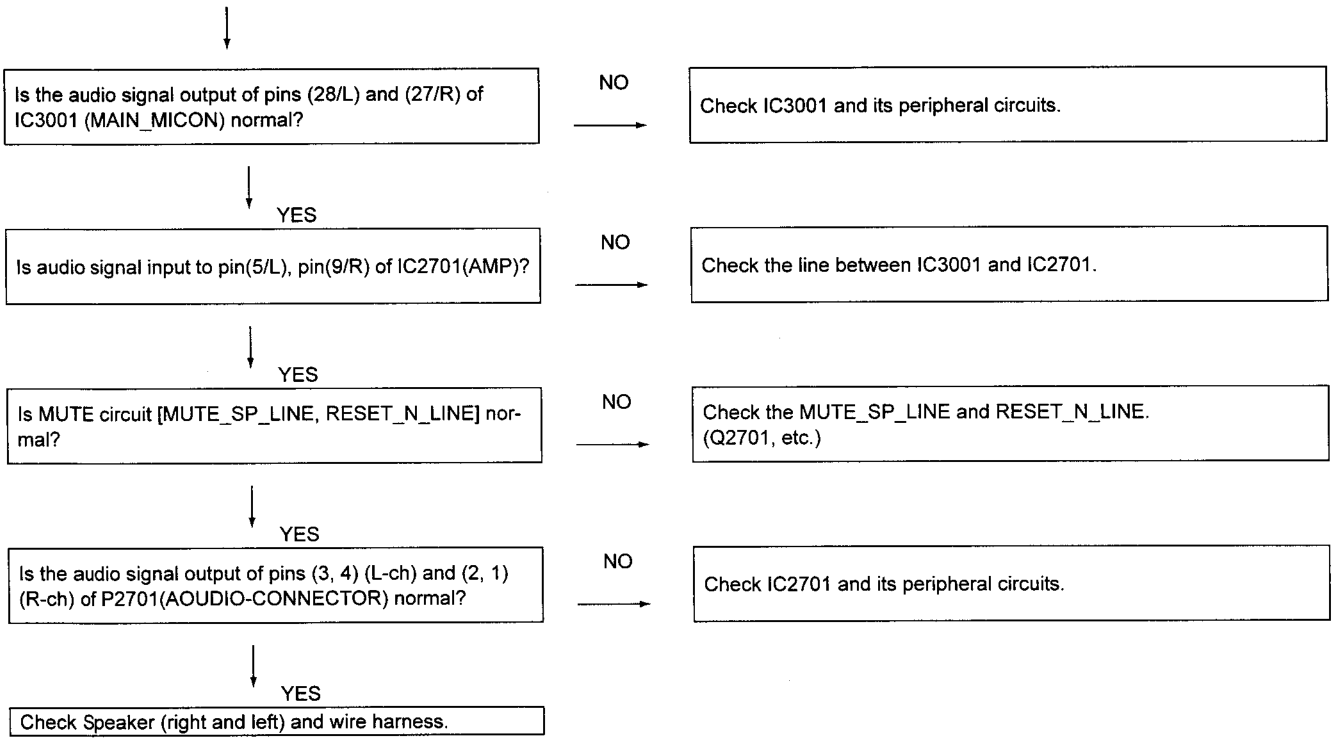
The backlight does not light



		NO
Are all fluorescent lamps on?	NO	Check each fluorescent lamp, and replace if defective. (CN7503-12, etc.)
Is F7501 normal?	YES	Check if the peripheral circuits are short-circuited or parts are faulty. (Q7501, Q7503, etc.)
Is 60V applied to both ends of C7501?	YES	Refer to "No power supply (Front LED does not light up)" and "No power-up even if turned on (Front LED light up)".
Is a voltage of 13V applied to PIN(20) of IC7501?	YES	Check the 13V line and the peripheral circuits.
Is the STB_ON/OFF signal supplied from PIN(2) of CN7502?	YES	Check the STB signal line on the MAIN_UNIT side and the peripheral circuits. (P2303/CN7502, etc.)
Is each control signal of connector CN7502 normally function? PIN(3) OFL (PWM light control signal input) PIN(5) ERR (Error output) PIN(7) REG2 (Light control method identification) PIN(9) ADIM (Tube current setting)	YES	Check each control circuit. OFL (PWM light control signal input)/H: Lamp ON, L: Lamp OFF ERR (Error output)/H: Normal, L: Error REG2 (Light control method identification)/H: External PWM input, L: Analog voltage input ADIM (Tube current setting)/H: Tube current 12mA, L: Tube current 8.5mA
Is [0] displayed as the number of [LAMP_ERROR] in the process mode?	YES	Reset the number of [LAMP_ERROR] to the default value in the process mode.
Is the drive output signal sent from PIN(16) and (15) of IC7501?	YES	Check IC7501and the peripheral circuits.
Does the drive output circuit normally work?	YES	Are Q7509-10, Q7501-4, etc. faulty? Check the peripheral circuits.
Does the secondary side of T7501-5 normally work?	YES	Is T7501-5, etc. faulty? Check the peripheral circuits.
Check if the feedback circuit is normal. (D7501-5, D7507-11, D7513-17, etc.)		

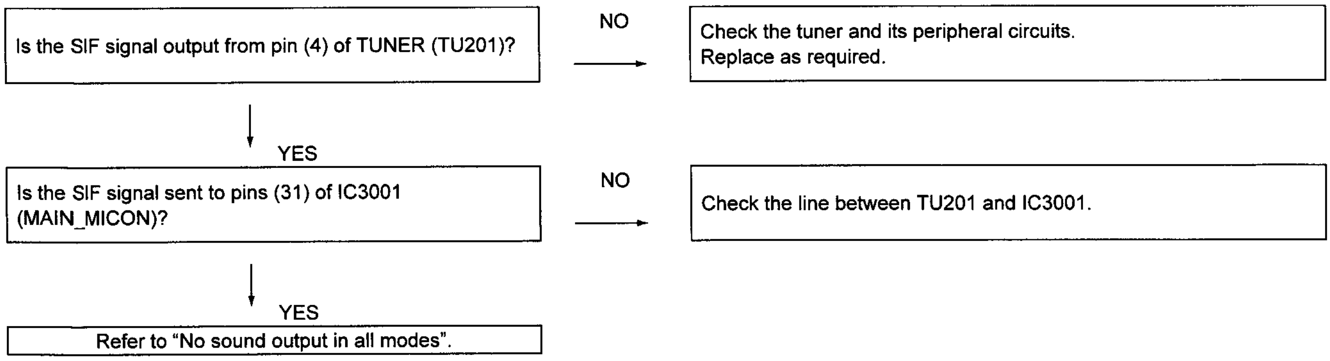
The sound is not emitted from the speaker though the picture has come out.

No sound output in all modes.?


Is the audio signal output of pins (28/L) and (27/R) of IC3001 (MAIN_MICON) normal?
NO
Check IC3001 and its peripheral circuits.
YES
Is audio signal input to pin(5/L), pin(9/R) of IC2701(AMP)?
NO
Check the line between IC3001 and IC2701.
YES
Is MUTE circuit [MUTE_SP_LINE, RESET_N_LINE] normal?
NO
Check the MUTE_SP_LINE and RESET_N_LINE. (Q2701, etc.)
YES
Is the audio signal output of pins (3, 4) (L-ch) and (2, 1) (R-ch) of P2701(AOUDIO-CONNECTOR) normal?
NO
Check IC2701 and its peripheral circuits.
YES
Check Speaker (right and left) and wire harness.

No sound (during the reception of TV(ANALOG) broadcasting)

Does not the sound go out though the picture has come out when UHF/VHF is received?


Is the SIF signal output from pin (4) of TUNER (TU201)?
NO
Check the tuner and its peripheral circuits. Replace as required.
YES
Is the SIF signal sent to pins (31) of IC3001 (MAIN_MICON)?
NO
Check the line between TU201 and IC3001.
YES
Refer to “No sound output in all modes”.

No sound (during the reception of TV(DIGITAL) broadcasting)

Does not the sound go out though the picture has come out when DTV is received?

Is the audio signal output from PIN(24,25)/ LETFT_M/P, PIN(28,29)/ RIGH_M/P of IC4001(SET-TOP_BOX_DECODER).	NO →	Check IC4001 and its peripheral circuits.
↓ YES		
Is the audio signal input to PIN(6,5)/ LETFT_M/P, (2,3)/ RIGH_M/P of IC4005(OP-AMP)?	NO →	Check the line between IC4001 and IC4005.
↓ YES		
Is the audio signal sent from PIN(7)/ AIN1L, (1)/AIN1R of IC4005 to PIN(10), PIN(9) of IC3001 (MAIN_MICON)?	NO →	Check the line between IC4005 and IC3001.
↓ YES		
Refer to “No sound output in all modes”.		

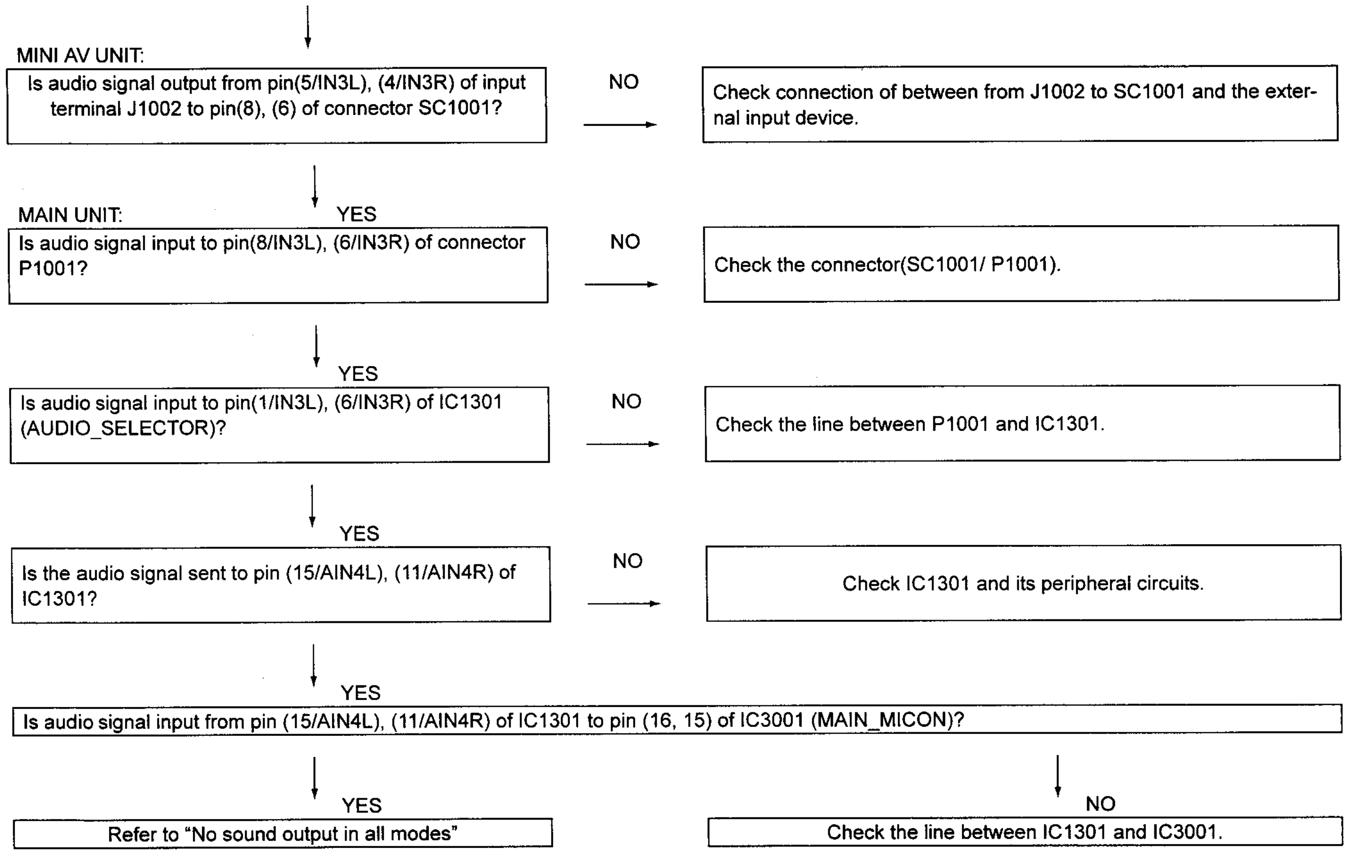
No sound from external input devices (1)

Does not the sound of the audio signal input to EXT1(SCART1) go out?
Does not the sound of the audio signal input to EXT2(SCART2) go out?

EXT1 Is the audio signal properly sent to pins (6) (AIN3_L) and (2) (AIN3_R) of SCART1(SC1102)?	NO →	Check the setting of an external input device that connects of SC1102.
EXT2 Is the audio signal properly sent to pins (6) (AIN2_L) and (2) (AIN2_R) of SCART2(SC1101)?	NO →	Check the setting of an external input device that connects of SC1101.
↓ YES		
EXT1 Is the audio signal properly sent to pins (14) (AIN3_L) and (13) (AIN3_R) of IC3001(MAIN_MICON)?	NO →	Check the line between SC1102 and IC3001.
EXT2 Is the audio signal properly sent to pins (12) (AIN2_L) and (11) (AIN2_R) of IC3001(MAIN_MICON)?	NO →	Check the line between SC1101 and IC3001.
↓ YES		
Refer to “No sound output in all modes”.		

No sound from external input devices (2)

Does not the sound of the audio signal input to EXT3 go out?



MINI AV UNIT:

Is audio signal output from pin(5/IN3L), (4/IN3R) of input terminal J1002 to pin(8), (6) of connector SC1001?

NO → Check connection of between from J1002 to SC1001 and the external input device.

YES ↓

MAIN UNIT:

Is audio signal input to pin(8/IN3L), (6/IN3R) of connector P1001?

NO → Check the connector(SC1001/ P1001).

YES ↓

Is audio signal input to pin(1/IN3L), (6/IN3R) of IC1301 (AUDIO_SELECTOR)?

NO → Check the line between P1001 and IC1301.

YES ↓

Is the audio signal sent to pin (15/AIN4L), (11/AIN4R) of IC1301?

NO → Check IC1301 and its peripheral circuits.

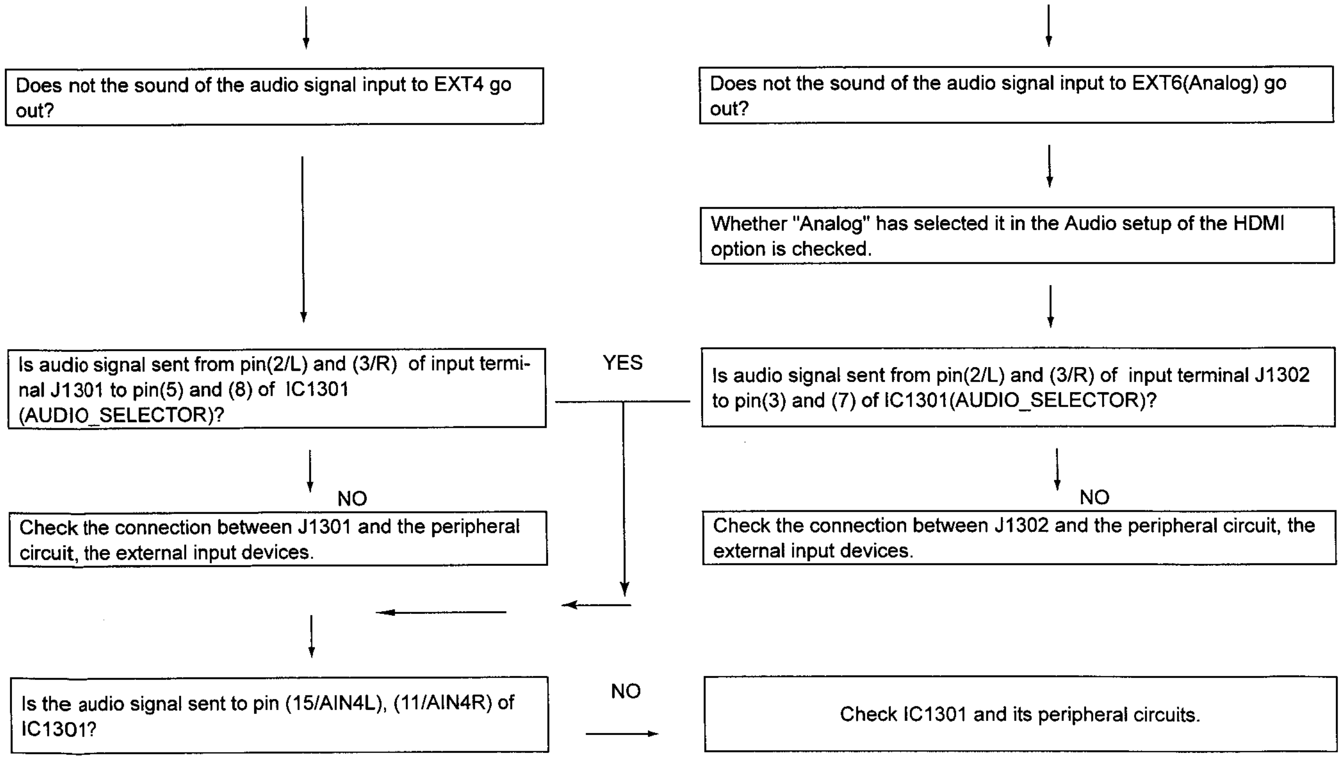
YES ↓

Is audio signal input from pin (15/AIN4L), (11/AIN4R) of IC1301 to pin (16, 15) of IC3001 (MAIN_MICON)?

YES ↓ Refer to "No sound output in all modes"

NO ↓ Check the line between IC1301 and IC3001.

No sound from external input devices (3)



Does not the sound of the audio signal input to EXT4 go out?

Does not the sound of the audio signal input to EXT6(Analog) go out?

Whether "Analog" has selected it in the Audio setup of the HDMI option is checked.

Is audio signal sent from pin(2/L) and (3/R) of input terminal J1301 to pin(5) and (8) of IC1301 (AUDIO_SELECTOR)?

Is audio signal sent from pin(2/L) and (3/R) of input terminal J1302 to pin(3) and (7) of IC1301(AUDIO_SELECTOR)?

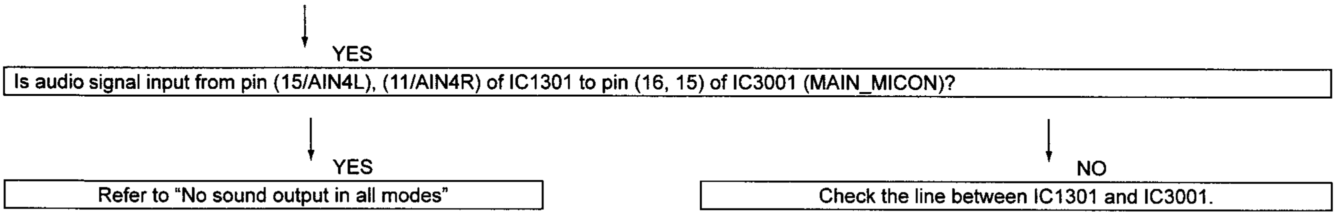
YES

NO ↓ Check the connection between J1301 and the peripheral circuit, the external input devices.

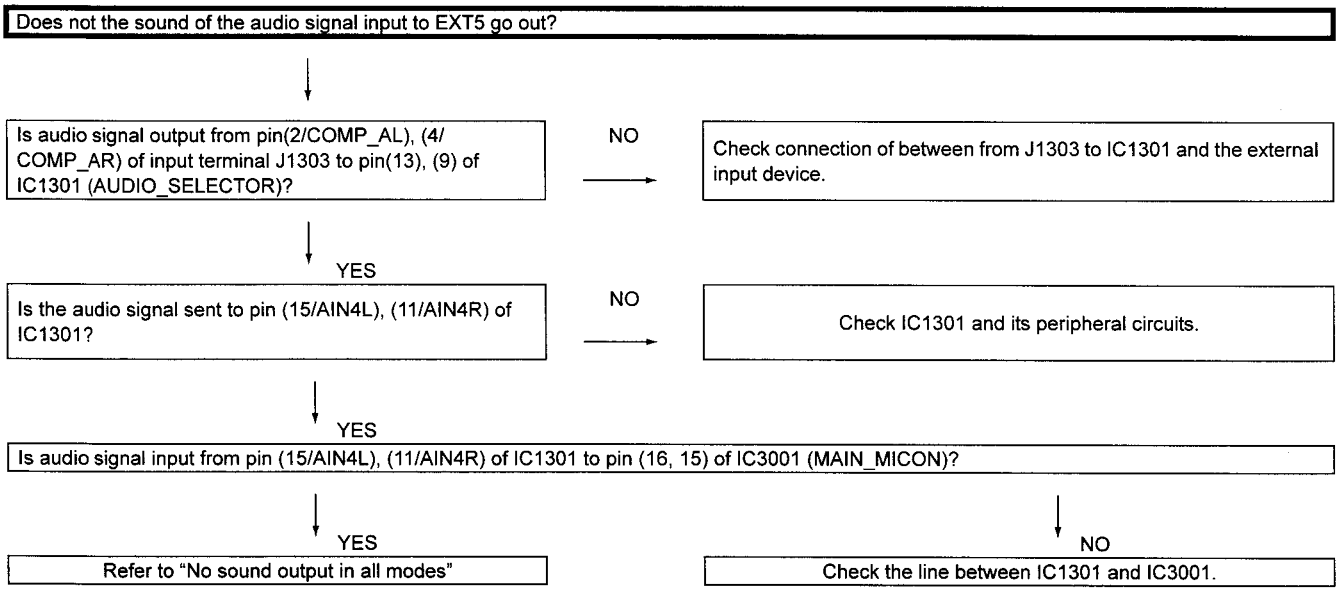
NO ↓ Check the connection between J1302 and the peripheral circuit, the external input devices.

Is the audio signal sent to pin (15/AIN4L), (11/AIN4R) of IC1301?

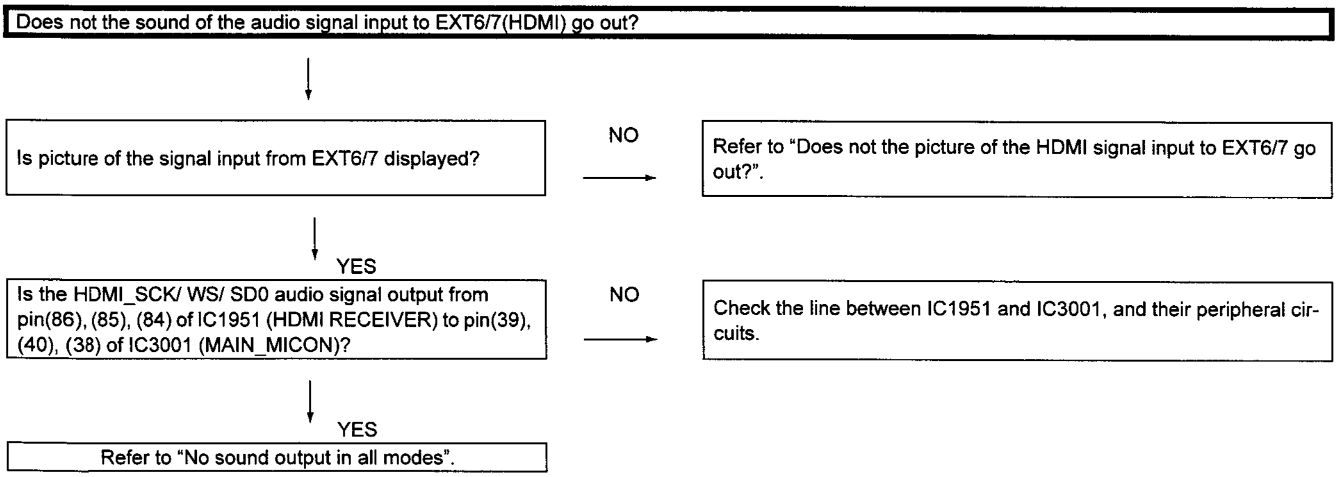
NO → Check IC1301 and its peripheral circuits.


YES
Is audio signal input from pin (15/AIN4L), (11/AIN4R) of IC1301 to pin (16, 15) of IC3001 (MAIN_MICON)?
YES
Refer to "No sound output in all modes"
NO
Check the line between IC1301 and IC3001.

No sound from external input devices (4)

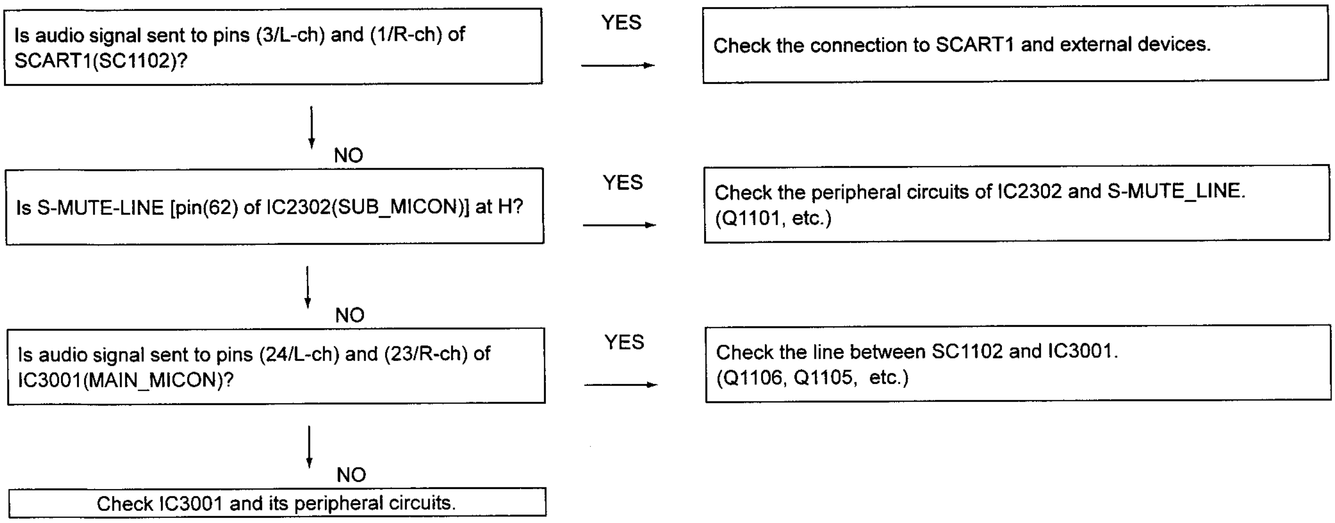

Does not the sound of the audio signal input to EXT5 go out?
Is audio signal output from pin(2/COMP_AL), (4/COMP_AR) of input terminal J1303 to pin(13), (9) of IC1301 (AUDIO_SELECTOR)?
NO
Check connection of between from J1303 to IC1301 and the external input device.
YES
Is the audio signal sent to pin (15/AIN4L), (11/AIN4R) of IC1301?
NO
Check IC1301 and its peripheral circuits.
YES
Is audio signal input from pin (15/AIN4L), (11/AIN4R) of IC1301 to pin (16, 15) of IC3001 (MAIN_MICON)?
YES
Refer to "No sound output in all modes"
NO
Check the line between IC1301 and IC3001.

No sound from external input devices (5)


Does not the sound of the audio signal input to EXT6/7(HDMI) go out?
Is picture of the signal input from EXT6/7 displayed?
NO
Refer to "Does not the picture of the HDMI signal input to EXT6/7 go out?".
YES
Is the HDMI_SCK/ WS/ SD0 audio signal output from pin(86), (85), (84) of IC1951 (HDMI RECEIVER) to pin(39), (40), (38) of IC3001 (MAIN_MICON)?
NO
Check the line between IC1951 and IC3001, and their peripheral circuits.
YES
Refer to "No sound output in all modes".

The audio signal is not output (1)

No audio signal output from SCART1 terminal.



Is audio signal sent to pins (3/L-ch) and (1/R-ch) of SCART1(SC1102)?

Check the connection to SCART1 and external devices.

Is S-MUTE-LINE [pin(62) of IC2302(SUB_MICON)] at H?

Check the peripheral circuits of IC2302 and S-MUTE_LINE. (Q1101, etc.)

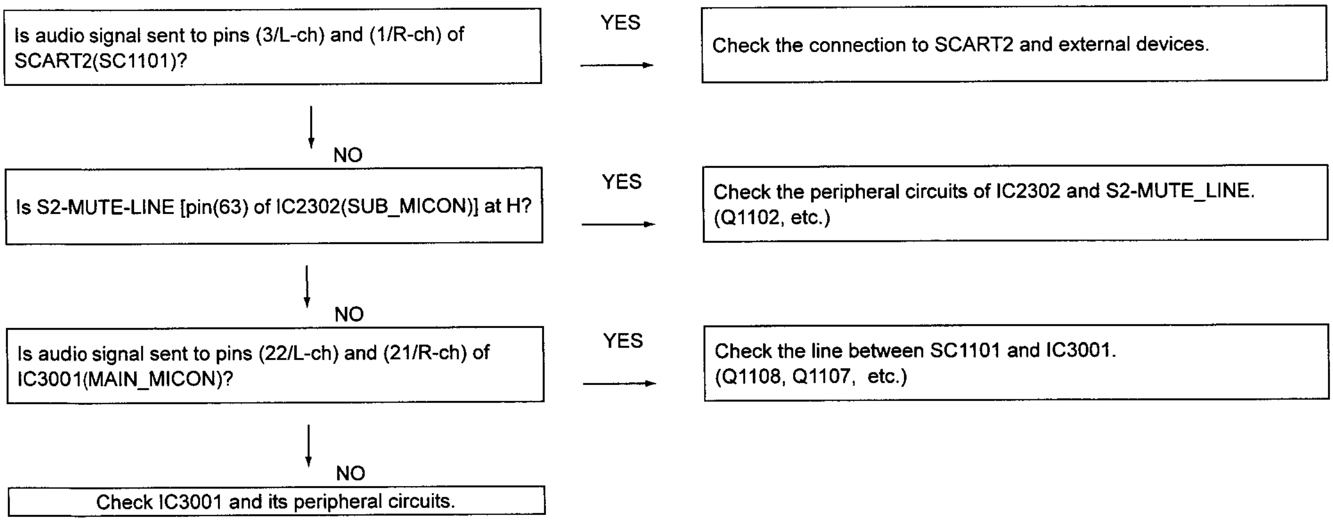
Is audio signal sent to pins (24/L-ch) and (23/R-ch) of IC3001(MAIN_MICON)?

Check the line between SC1102 and IC3001. (Q1106, Q1105, etc.)

Check IC3001 and its peripheral circuits.

The audio signal is not output (2)

No audio signal output from SCART2 terminal.



Is audio signal sent to pins (3/L-ch) and (1/R-ch) of SCART2(SC1101)?

Check the connection to SCART2 and external devices.

Is S2-MUTE-LINE [pin(63) of IC2302(SUB_MICON)] at H?

Check the peripheral circuits of IC2302 and S2-MUTE_LINE. (Q1102, etc.)

Is audio signal sent to pins (22/L-ch) and (21/R-ch) of IC3001(MAIN_MICON)?

Check the line between SC1101 and IC3001. (Q1108, Q1107, etc.)

Check IC3001 and its peripheral circuits.

The audio signal is not output (3)

NO

No audio signal output from AUDIO_OUTPUT terminal.

Is audio signal output to pin(2/L-ch), (4/R-ch) of audio output terminal J1304?

YES → Check the connection to J1304 and external devices.

↓ NO

Is S-MUTE-LINE [pin(62) of IC2302(SUB_MICON)] at H?

YES → Check the peripheral circuits of IC2302 and S-MUTE_LINE. (Q1303, etc.)

↓ NO

Is audio signal sent to pins (22/L-ch) and (21/R-ch) of IC3001(MAIN_MICON)?

YES → Check the line between J1304 and IC3001. (Q1302, Q1301, etc.)

↓ NO

Check IC3001 and its peripheral circuits.

The audio signal is not output (6)

No sound from HEDPHONE_OUTPUT terminal.

Is the HP_PLUG signal input into pin (208) of MAIN_UNIT's IC3001 (MAIN_MICON) from pin (6) of a headphone terminal (J1003)?

NO → Check the line between J1003 and IC3001. (SC1001/P1001, IC3001, etc.)

↓ YES

Is the audio signal output to pin(2/L-ch) pin(3/R-ch) of headphone terminal J1003?

YES → Check HEAD-PHONE (J1003) or peripheral circuits.

↓ NO

Is the audio signal input into pin (3) and (1) of connector SC1001 from pin(3/L-ch),(1/R-ch) of connector P1001?

YES → Check the line between P1001 and J1003. (SC1001/P1001, etc.)

↓ NO

Is HP-MUTE-LINE [pin(40) of IC2302(SUB_MICON)] at H?

YES → Check the peripheral circuits of IC2302 and HP-MUTE_LINE. (Q1001, etc.)

↓ NO

Is audio signal sent to pins (26/L-ch) and (25/R-ch) of IC3001(MAIN_MICON)?

YES → Check the line between P1001 and IC3001. (IC1102, etc.)

↓ NO

Check IC3001 and its peripheral circuits.

No picture on the display (1)

The picture doesn't appear in all modes.

Is the LVDS signal output from IC3001 (MAIN_MICON)?
LVDS0_P/N(140/141), LVDS1_P/N(137/138),
LVDS2_P/N(134/135), LVDS3_P/N(128/129),
LVDS4_P/N(125/126), LVDS_CP/CN(131/132).

NO → Check IC3001 and its peripheral control circuits.

↓ YES

Is the LVDS signal input to IC8103 (LCD_CONTROL)?
A0+/-(165/164), A1+/-(167/166), A2+/-(169/168), A3+/-(189/188), A4+/-(191/190), ACK+/-(187/186)

NO → Check the line between IC3001 and IC8103.

↓ YES

Is the control signal of LCD controller normal?

NO → Check the control signal R/L_LINE, U/D_OUT_LINE, FRAME_LINE, BANK_SEL_LINE, TEMP1/2/3_LINE, QS_EN_LINE, etc.

↓ YES

Is VCC_3.3V, VCC_2.5V or VCC_1.5V supplied to IC8103?

NO → Check if IC8402(MULTI_CHANNEL_SYSTEM_POWER_SUPPLY) and the peripheral power supply circuit are normal.

↓ YES

Are the video signals BR/BG/BB (0_P/M-3_P/M), FR/FG/FB (0_P/M-3_M/P) and the CLK signals (BCLK_P/M, FCLK_P/M) output from IC8103?

NO → Check IC8103 and its peripheral circuits.

↓ YES

Are BR/BG/BB (0_P/M-3_P/M), BCLK (P/M) input to connector SC8201 and FR/FG/FB (0_P/M-3_P/M), FCLK (P/M) input to connector SC8202?

NO → Check the line between IC8103 and SC8201/SC8202.

↓ YES

Are the gradation signals (VH/VL_247, 191, 159, 63, 31, 0) normally sent from IC8201 (GLAY_LEVEL _GENERATION) to SC8201/SC8202?

NO → Check IC8201 and that the communication between its peripheral circuits and IC8103 is normal. (Each line of DAC_CLK/DATA/LATCH)

↓ YES

Check the connectors SC8201/SC8202 and LCD panel.

No picture on the display (2)

Does not the picture come out when VHF/UHF is received?

Is the video signal(VIN1) output from pin (6) of TUNER (TU201)?

NO → Check whether I2C is normally accessed between named TU201 and IC3001(MAIN_MICON).

↓ YES

Is the video signal(VIN1) sent to pins (191) of IC3001 (MAIN_MICON)?

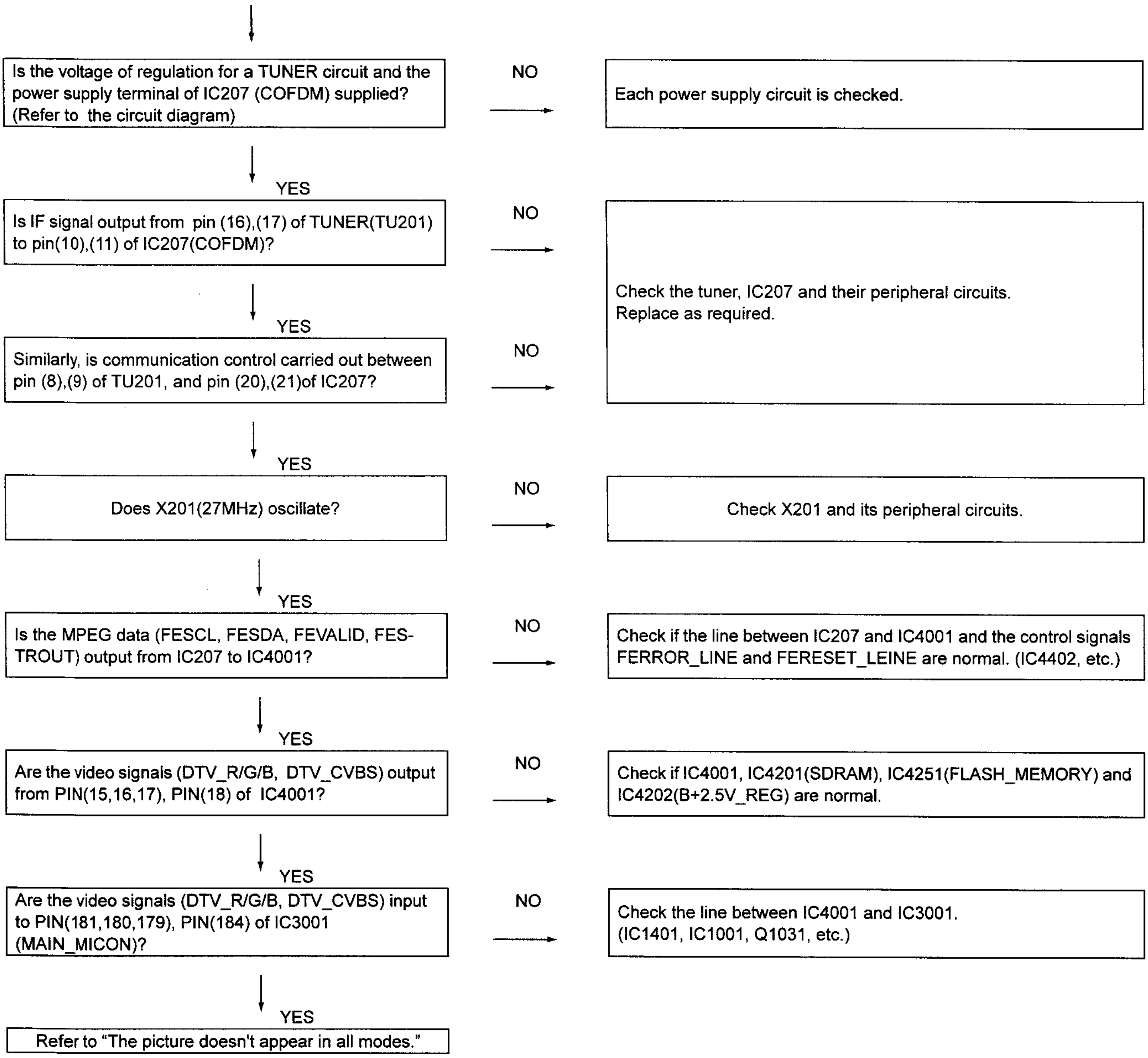
NO → Check the line between TU201 and IC3001.

↓ YES

Refer to "The picture doesn't appear in all modes."

No picture on the display (3)

Does not the picture come out when DTV is received?



Is the voltage of regulation for a TUNER circuit and the power supply terminal of IC207 (COFDM) supplied? (Refer to the circuit diagram)

NO → Each power supply circuit is checked.

YES ↓

Is IF signal output from pin (16),(17) of TUNER(TU201) to pin(10),(11) of IC207(COFDM)?

NO → Check the tuner, IC207 and their peripheral circuits. Replace as required.

YES ↓

Similarly, is communication control carried out between pin (8),(9) of TU201, and pin (20),(21)of IC207?

NO → Check the tuner, IC207 and their peripheral circuits. Replace as required.

YES ↓

Does X201(27MHz) oscillate?

NO → Check X201 and its peripheral circuits.

YES ↓

Is the MPEG data (FESCL, FESDA, FEVALID, FES-TROUT) output from IC207 to IC4001?

NO → Check if the line between IC207 and IC4001 and the control signals FERROR_LINE and FERESET_LEINE are normal. (IC4402, etc.)

YES ↓

Are the video signals (DTV_R/G/B, DTV_CVBS) output from PIN(15,16,17), PIN(18) of IC4001?

NO → Check if IC4001, IC4201(SDRAM), IC4251(FLASH_MEMORY) and IC4202(B+2.5V_REG) are normal.

YES ↓

Are the video signals (DTV_R/G/B, DTV_CVBS) input to PIN(181,180,179), PIN(184) of IC3001 (MAIN_MICON)?

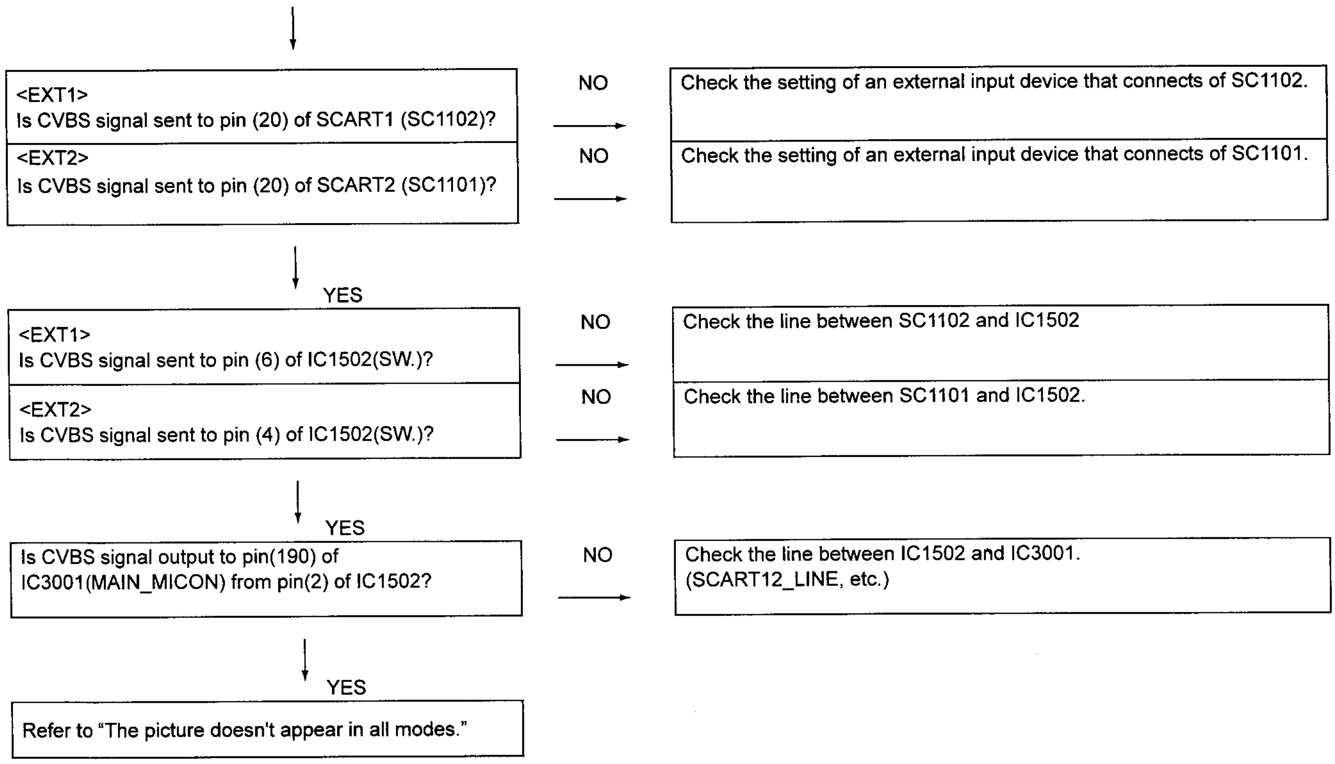
NO → Check the line between IC4001 and IC3001. (IC1401, IC1001, Q1031, etc.)

YES ↓

Refer to "The picture doesn't appear in all modes."

[External input EXT1,EXT2] No picture on the display (4)

Does not the picture of the CVBS signal input to EXT1 go out?
Does not the picture of the CVBS signal input to EXT2 go out?



<EXT1>
Is CVBS signal sent to pin (20) of SCART1 (SC1102)? — NO → Check the setting of an external input device that connects of SC1102.

<EXT2>
Is CVBS signal sent to pin (20) of SCART2 (SC1101)? — NO → Check the setting of an external input device that connects of SC1101.

YES

<EXT1>
Is CVBS signal sent to pin (6) of IC1502(SW.)? — NO → Check the line between SC1102 and IC1502

<EXT2>
Is CVBS signal sent to pin (4) of IC1502(SW.)? — NO → Check the line between SC1101 and IC1502.

YES

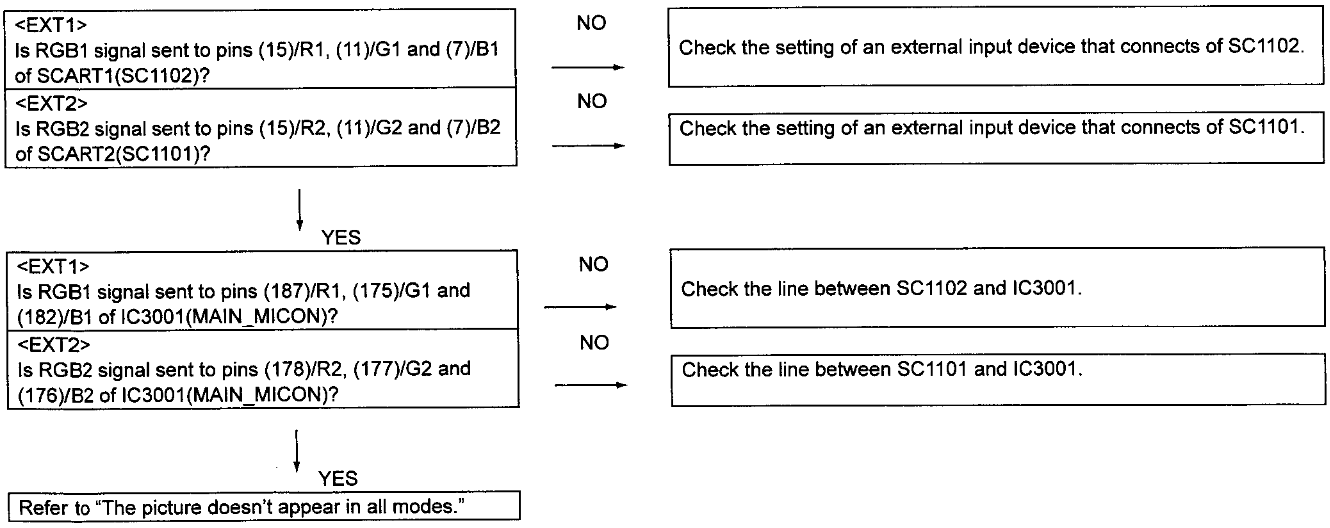
Is CVBS signal output to pin(190) of IC3001(MAIN_MICON) from pin(2) of IC1502? — NO → Check the line between IC1502 and IC3001. (SCART12_LINE, etc.)

YES

Refer to "The picture doesn't appear in all modes."

[External input EXT1,EXT2] No picture on the display (5)

Does not the picture of the R/G/B video signal input to EXT1 go out?
Does not the picture of the R/G/B video signal input to EXT2 go out?



<EXT1>
Is RGB1 signal sent to pins (15)/R1, (11)/G1 and (7)/B1 of SCART1(SC1102)? — NO → Check the setting of an external input device that connects of SC1102.

<EXT2>
Is RGB2 signal sent to pins (15)/R2, (11)/G2 and (7)/B2 of SCART2(SC1101)? — NO → Check the setting of an external input device that connects of SC1101.

YES

<EXT1>
Is RGB1 signal sent to pins (187)/R1, (175)/G1 and (182)/B1 of IC3001(MAIN_MICON)? — NO → Check the line between SC1102 and IC3001.

<EXT2>
Is RGB2 signal sent to pins (178)/R2, (177)/G2 and (176)/B2 of IC3001(MAIN_MICON)? — NO → Check the line between SC1101 and IC3001.

YES

Refer to "The picture doesn't appear in all modes."

[External input EXT1,EXT2] No picture on the display (6)

Does not the picture of the Y/C video signal input to EXT1 go out?
Does not the picture of the Y/C video signal input to EXT2 go out?

<EXT1>
Is Y/C video signal sent to pins (20)/Y and (15)/C of SCART1 (SC1102)?

NO → Check the setting of an external input device that connects of SC1102.

<EXT2>
Is Y/C video signal sent to pins (20)/Y and (15)/C of SCART2 (SC1101)?

NO → Check the setting of an external input device that connects of SC1101.

YES

<EXT1>
Is Y/C signal sent to pins (190)/Y, (187)/C of IC3001(MAIN_MICON)?

NO → Check the line between SC1102 and IC3001.
.(IC502, SCART12_LINE, etc.)

<EXT2>
Is Y/C signal sent to pins (190)/Y, (178)/C of IC3001(MAIN_MICON)?

NO → Check the line between SC1101 and IC3001
.(IC502, SCART12_LINE, etc.)

YES

Refer to "The picture doesn't appear in all modes."

<When EXT3 is used for external input> No picture on the display (7)

Does not the picture of the composite video signal input to EXT3 go out?

Is CVBS signal output from pin(6) in input terminal J1002 to pin(10) of connector SC1001?

NO → Check the line between J1002 and SC1001.

YES

Is the CVBS signal input from pin(10) of connector P1001 to pin(1) of IC1001(VIDEO SELECTOR)?

NO → Check the line between P1001 and IC1001.
(Connector SC1001/P1001, etc.)

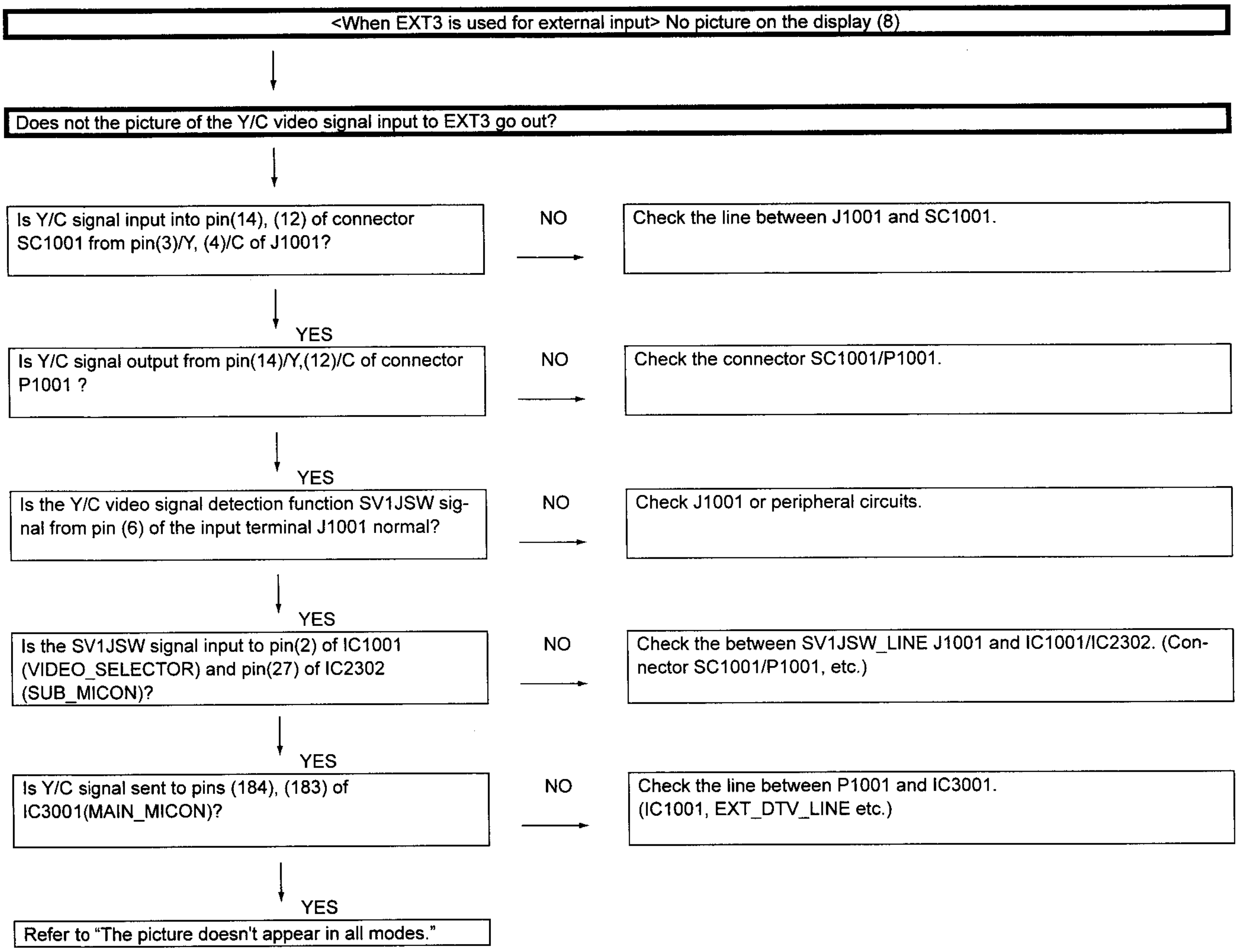
YES

Is CVBS signal output to pin(184) of IC3001(MAIN_MICON) from pin(7) of IC1001?

NO → Check the line between IC1001 and IC3001.
(SV1JSW_LINE, EXT_DTV_LINE, etc.)

YES

Refer to (The picture doesn't appear in all modes.)



<When EXT3 is used for external input> No picture on the display (8)

Does not the picture of the Y/C video signal input to EXT3 go out?

Is Y/C signal input into pin(14), (12) of connector SC1001 from pin(3)/Y, (4)/C of J1001?

NO → Check the line between J1001 and SC1001.

YES

Is Y/C signal output from pin(14)/Y,(12)/C of connector P1001 ?

NO → Check the connector SC1001/P1001.

YES

Is the Y/C video signal detection function SV1JSW signal from pin (6) of the input terminal J1001 normal?

NO → Check J1001 or peripheral circuits.

YES

Is the SV1JSW signal input to pin(2) of IC1001 (VIDEO_SELECTOR) and pin(27) of IC2302 (SUB_MICON)?

NO → Check the between SV1JSW_LINE J1001 and IC1001/IC2302. (Connector SC1001/P1001, etc.)

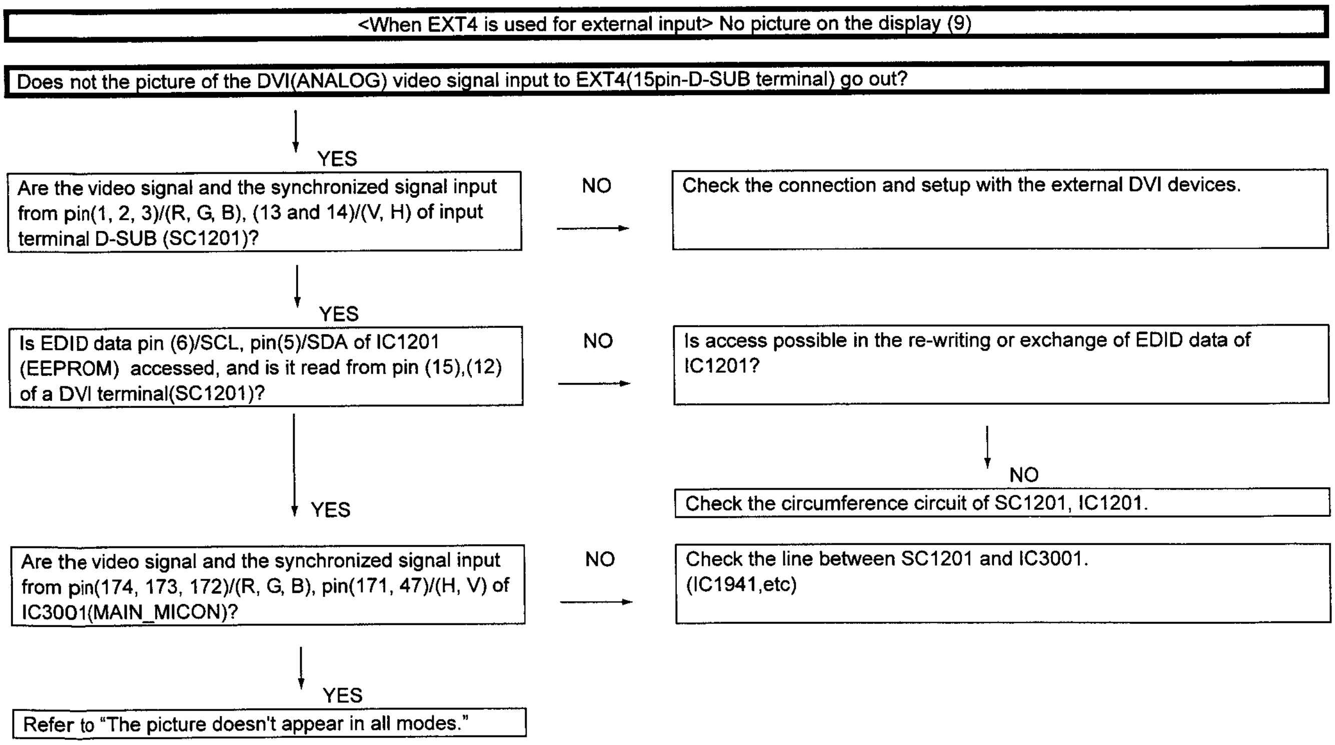
YES

Is Y/C signal sent to pins (184), (183) of IC3001(MAIN_MICON)?

NO → Check the line between P1001 and IC3001. (IC1001, EXT_DTV_LINE etc.)

YES

Refer to "The picture doesn't appear in all modes."



<When EXT4 is used for external input> No picture on the display (9)

Does not the picture of the DVI(ANALOG) video signal input to EXT4(15pin-D-SUB terminal) go out?

YES

Are the video signal and the synchronized signal input from pin(1, 2, 3)/(R, G, B), (13 and 14)/(V, H) of input terminal D-SUB (SC1201)?

NO → Check the connection and setup with the external DVI devices.

YES

Is EDID data pin (6)/SCL, pin(5)/SDA of IC1201 (EEPROM) accessed, and is it read from pin (15),(12) of a DVI terminal(SC1201)?

NO → Is access possible in the re-writing or exchange of EDID data of IC1201?

NO → Check the circumference circuit of SC1201, IC1201.

YES

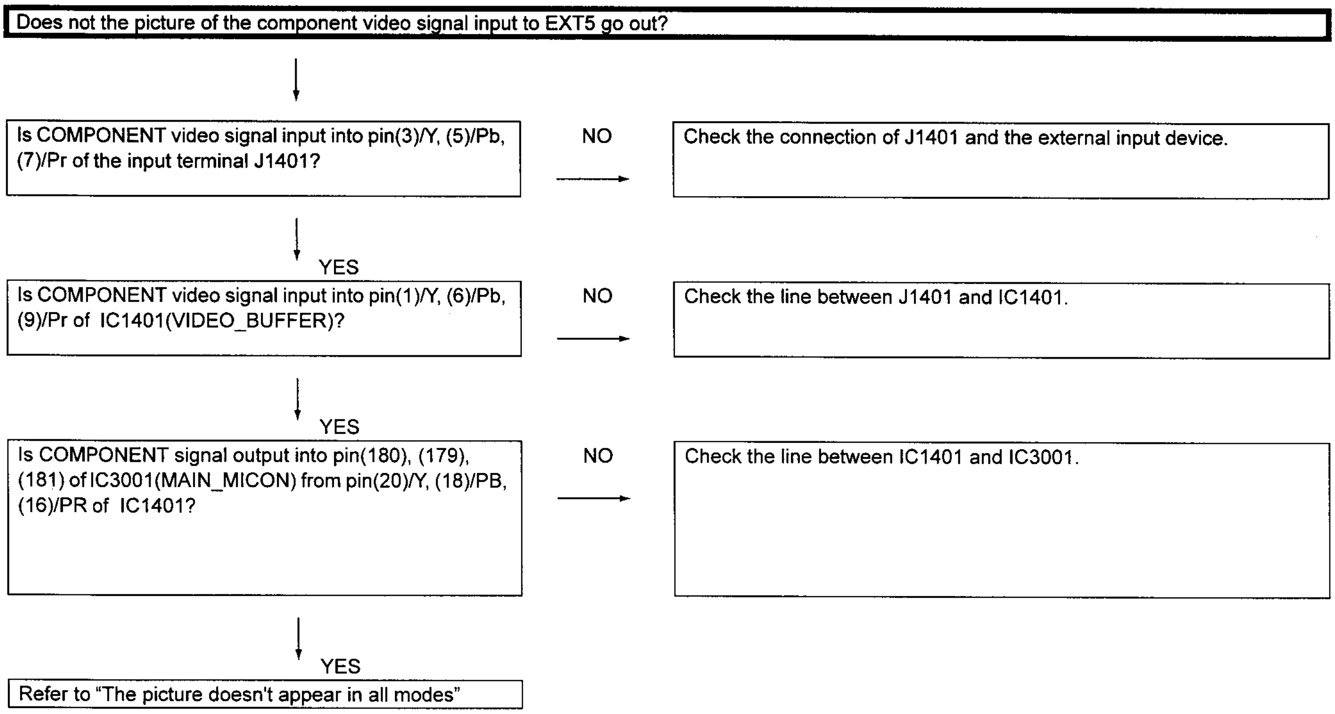
Are the video signal and the synchronized signal input from pin(174, 173, 172)/(R, G, B), pin(171, 47)/(H, V) of IC3001(MAIN_MICON)?

NO → Check the line between SC1201 and IC3001. (IC1941,etc)

YES

Refer to "The picture doesn't appear in all modes."

<When EXT5 is used for external input> No picture on the display (10)



Does not the picture of the component video signal input to EXT5 go out?

Is COMPONENT video signal input into pin(3)/Y, (5)/Pb, (7)/Pr of the input terminal J1401?

NO → Check the connection of J1401 and the external input device.

YES

Is COMPONENT video signal input into pin(1)/Y, (6)/Pb, (9)/Pr of IC1401(VIDEO_BUFFER)?

NO → Check the line between J1401 and IC1401.

YES

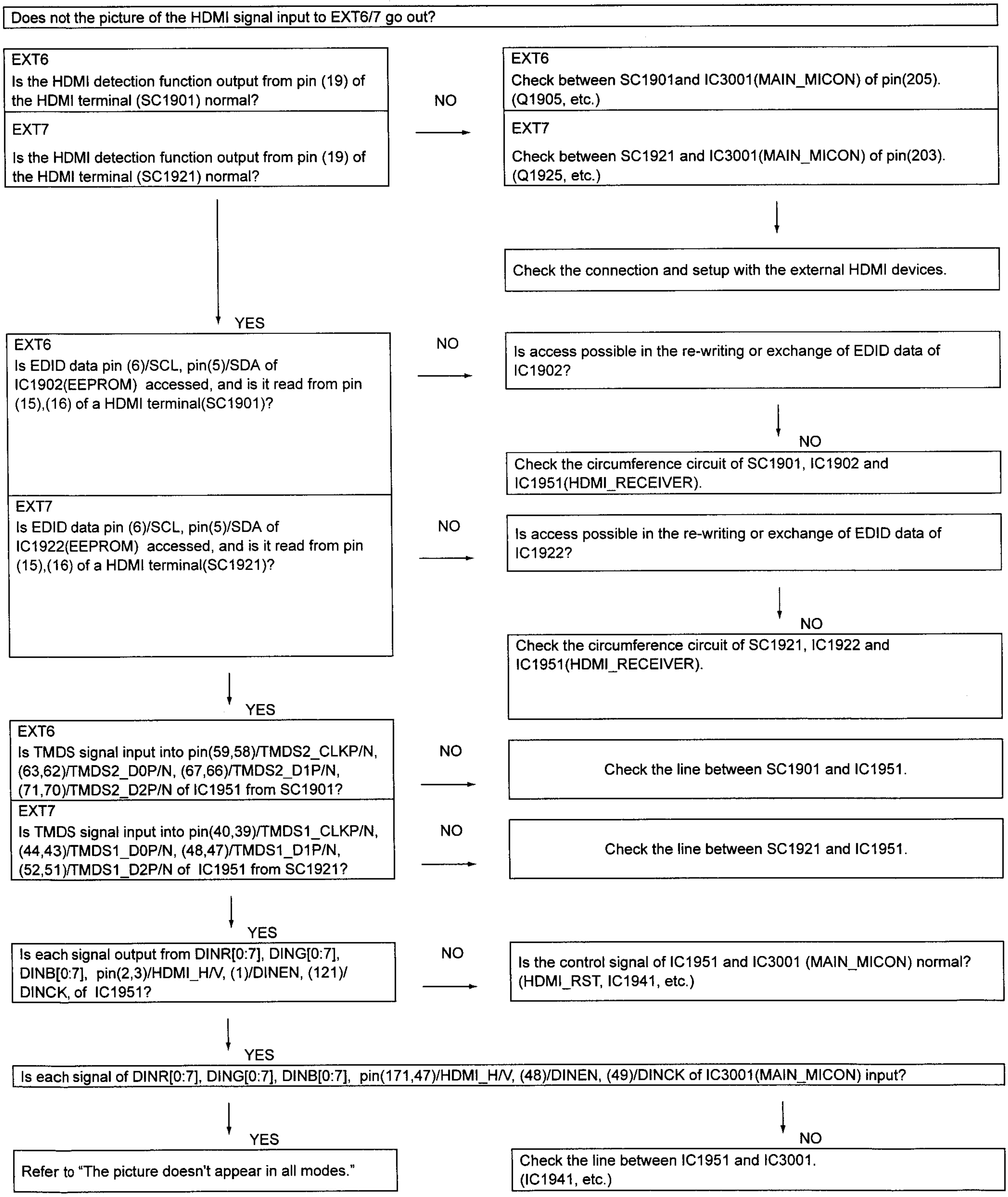
Is COMPONENT signal output into pin(180), (179), (181) of IC3001(MAIN_MICON) from pin(20)/Y, (18)/PB, (16)/PR of IC1401?

NO → Check the line between IC1401 and IC3001.

YES

Refer to "The picture doesn't appear in all modes"

<When EXT6/7 is used for external input> No picture on the display (11)



Does not the picture of the HDMI signal input to EXT6/7 go out?

EXT6
Is the HDMI detection function output from pin (19) of the HDMI terminal (SC1901) normal?

EXT7
Is the HDMI detection function output from pin (19) of the HDMI terminal (SC1921) normal?

EXT6
Check between SC1901and IC3001(MAIN_MICON) of pin(205).
(Q1905, etc.)

EXT7
Check between SC1921 and IC3001(MAIN_MICON) of pin(203).
(Q1925, etc.)

Check the connection and setup with the external HDMI devices.

EXT6
Is EDID data pin (6)/SCL, pin(5)/SDA of IC1902(EEPROM) accessed, and is it read from pin (15),(16) of a HDMI terminal(SC1901)?

EXT7
Is EDID data pin (6)/SCL, pin(5)/SDA of IC1922(EEPROM) accessed, and is it read from pin (15),(16) of a HDMI terminal(SC1921)?

Is access possible in the re-writing or exchange of EDID data of IC1902?

Check the circumference circuit of SC1901, IC1902 and IC1951(HDMI_RECEIVER).

Is access possible in the re-writing or exchange of EDID data of IC1922?

Check the circumference circuit of SC1921, IC1922 and IC1951(HDMI_RECEIVER).

EXT6
Is TMDS signal input into pin(59,58)/TMDS2_CLKP/N, (63,62)/TMDS2_D0P/N, (67,66)/TMDS2_D1P/N, (71,70)/TMDS2_D2P/N of IC1951 from SC1901?

EXT7
Is TMDS signal input into pin(40,39)/TMDS1_CLKP/N, (44,43)/TMDS1_D0P/N, (48,47)/TMDS1_D1P/N, (52,51)/TMDS1_D2P/N of IC1951 from SC1921?

Check the line between SC1901 and IC1951.

Check the line between SC1921 and IC1951.

Is each signal output from DINR[0:7], DING[0:7], DINB[0:7], pin(2,3)/HDMI_H/V, (1)/DINEN, (121)/DINCK, of IC1951?

Is the control signal of IC1951 and IC3001 (MAIN_MICON) normal?
(HDMI_RST, IC1941, etc.)

Is each signal of DINR[0:7], DING[0:7], DINB[0:7], pin(171,47)/HDMI_H/V, (48)/DINEN, (49)/DINCK of IC3001(MAIN_MICON) input?

Refer to "The picture doesn't appear in all modes."

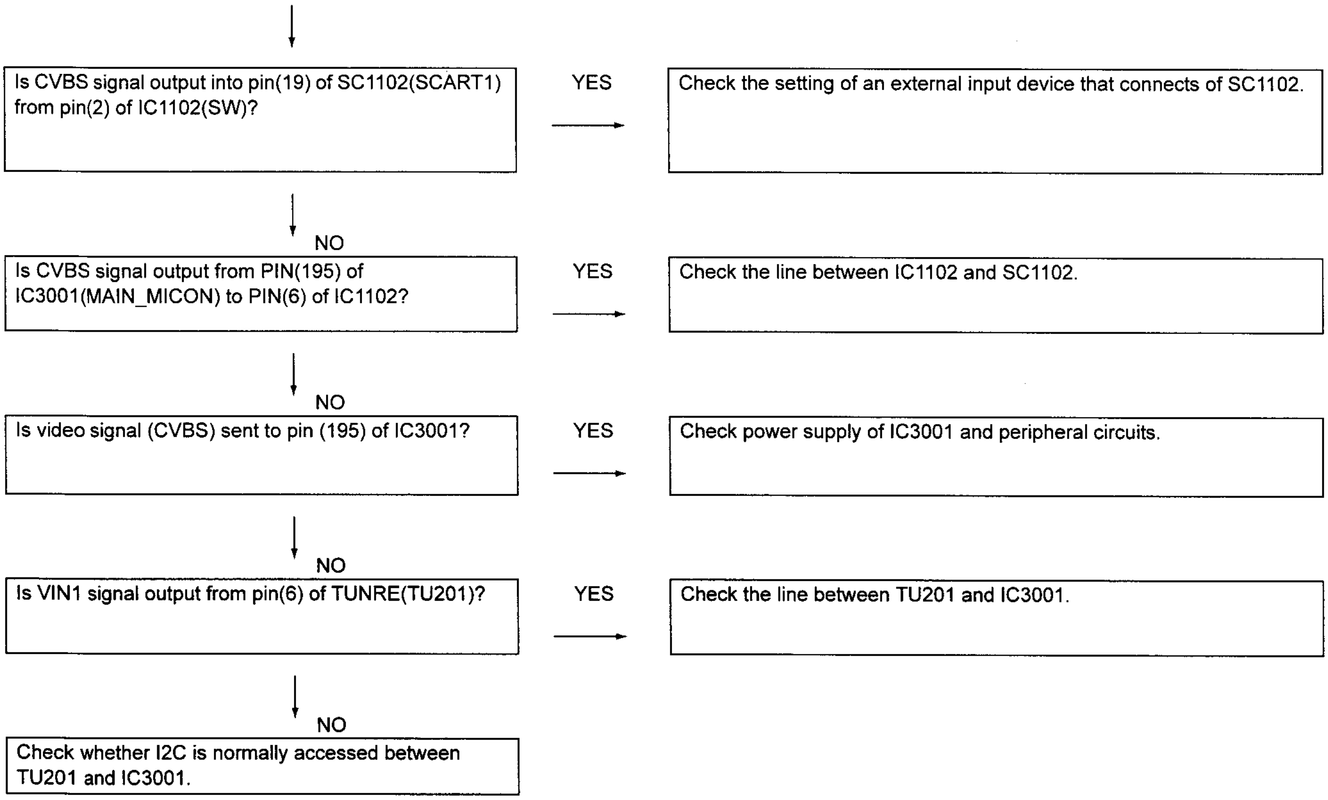
Check the line between IC1951 and IC3001.
(IC1941, etc.)

<During external connection> No picture on the monitor (1)

SCART1:

No picture appears on EXT1 - connected monitor during the tuner (U/V) reception.

Checklist:
1) Is the Signal Type (item) in MENU-Option-Input Select equal to Signal Type of an external device?... Set it to "CVBS", "Y/C" or "RGB".
2) Is ANT-CABLE disconnected or connected improperly? ... Connect it correctly as per the operation manual.
3) The picture is sent to the monitor in a CVBS signal if the source during display is TV, CVBS or Y/C of EXT1-3.
When sent by component, etc., that signal is not sent to the monitor.
4) When the monitor picture is not sent and is not displayed on the monitor, refer to "No picture" for each terminal.
5) The video output from EXT1 is not the monitor output (output of the picture now watching).
The picture of the last selected TV channel is always sent to EXT1. (Specification)



Is CVBS signal output into pin(19) of SC1102(SCART1) from pin(2) of IC1102(SW)?

Check the setting of an external input device that connects of SC1102.

Is CVBS signal output from PIN(195) of IC3001(MAIN_MICON) to PIN(6) of IC1102?

Check the line between IC1102 and SC1102.

Is video signal (CVBS) sent to pin (195) of IC3001?

Check power supply of IC3001 and peripheral circuits.

Is VIN1 signal output from pin(6) of TUNRE(TU201)?

Check the line between TU201 and IC3001.

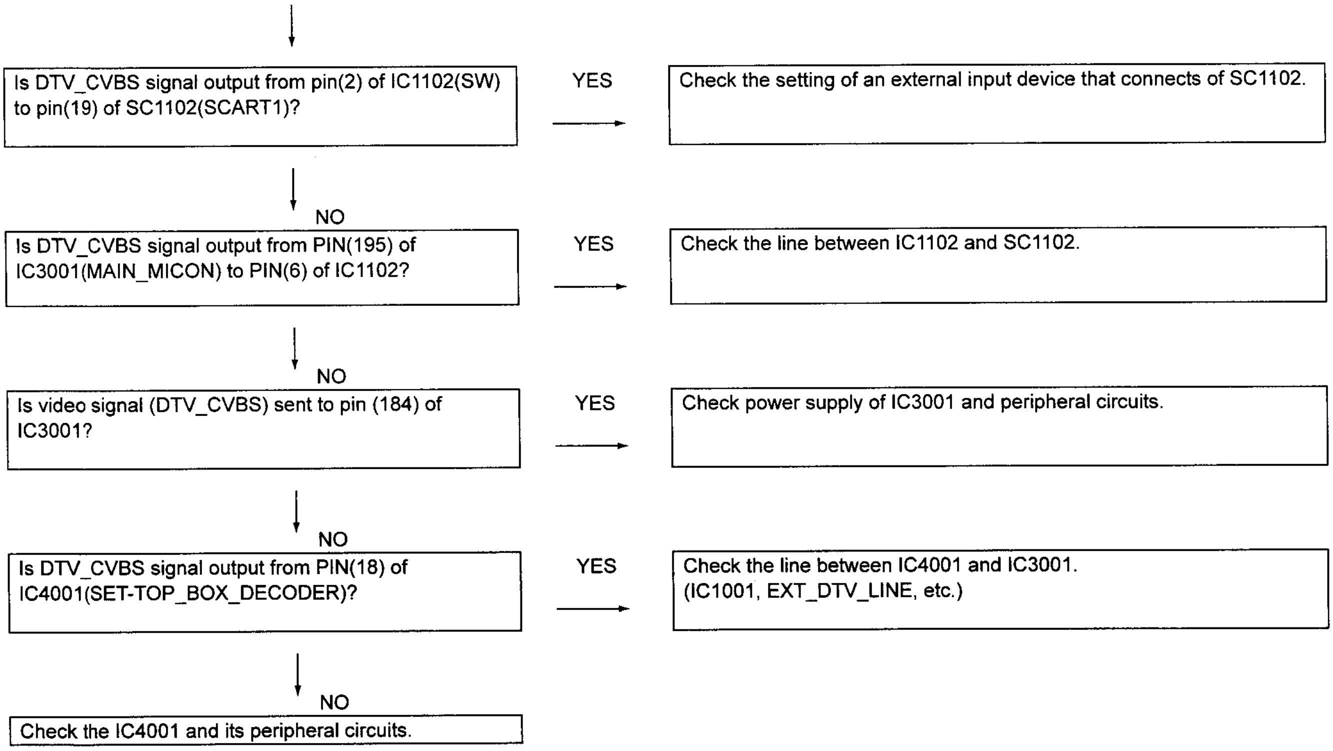
Check whether I2C is normally accessed between TU201 and IC3001.

<During external connection> No picture on the monitor (2)

SCART1:

No picture appears on EXT1 - connected monitor during the tuner (DTV) reception.

Checklist:
1) Is the Signal Type (item) in MENU-Option-Input Select equal to Signal Type of an external device? ... Set it to “CVBS”, “Y/C” or “RGB”.
2) Is ANT-CABLE disconnected or connected improperly? ... Connect it correctly as per the operation manual.
3) The picture is sent to the monitor in a CVBS signal if the source during display is TV, CVBS or Y/C of EXT1-3.
When sent by component, etc., that signal is not sent to the monitor.
4) When the monitor picture is not sent and is not displayed on the monitor, refer to “No picture” for each terminal.
5) The video output from EXT1 is not the monitor output (output of the picture now watching).
The picture of the last selected TV channel is always sent to EXT1. (Specification)



Is DTV_CVBS signal output from pin(2) of IC1102(SW) to pin(19) of SC1102(SCART1)?

YES → Check the setting of an external input device that connects of SC1102.

NO ↓

Is DTV_CVBS signal output from PIN(195) of IC3001(MAIN_MICON) to PIN(6) of IC1102?

YES → Check the line between IC1102 and SC1102.

NO ↓

Is video signal (DTV_CVBS) sent to pin (184) of IC3001?

YES → Check power supply of IC3001 and peripheral circuits.

NO ↓

Is DTV_CVBS signal output from PIN(18) of IC4001(SET-TOP_BOX_DECODER)?

YES → Check the line between IC4001 and IC3001. (IC1001, EXT_DTV_LINE, etc.)

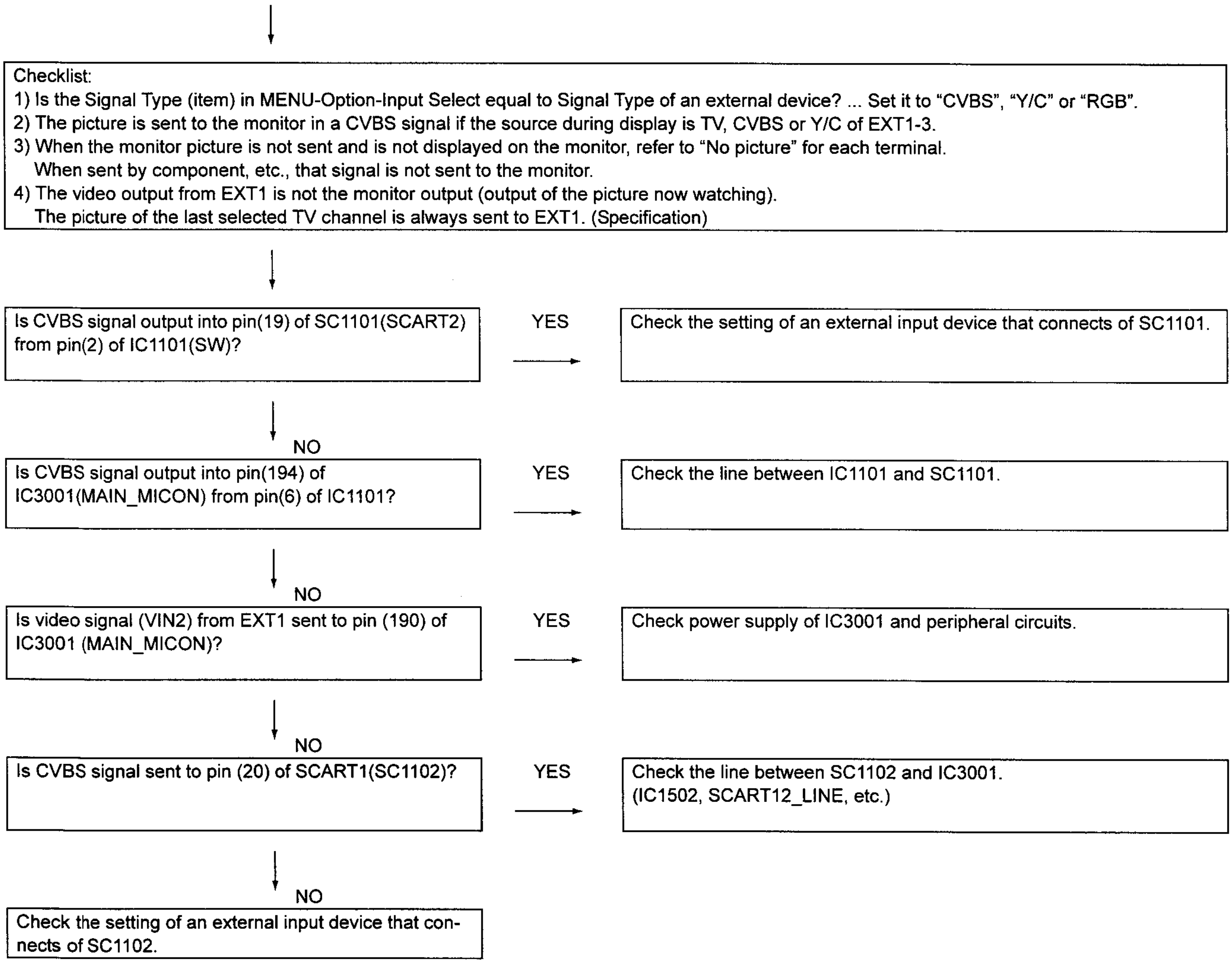
NO ↓

Check the IC4001 and its peripheral circuits.

<During external connection> No picture on the monitor (3)

SCART2:

No picture from EXT1 appears on EXT2-connected monitor.
NOTE: Normally, if the screen during display is sent to EXT2, no picture is sent to EXT2.



Checklist:
1) Is the Signal Type (item) in MENU-Option-Input Select equal to Signal Type of an external device? ... Set it to “CVBS”, “Y/C” or “RGB”.
2) The picture is sent to the monitor in a CVBS signal if the source during display is TV, CVBS or Y/C of EXT1-3.
3) When the monitor picture is not sent and is not displayed on the monitor, refer to “No picture” for each terminal.
When sent by component, etc., that signal is not sent to the monitor.
4) The video output from EXT1 is not the monitor output (output of the picture now watching).
The picture of the last selected TV channel is always sent to EXT1. (Specification)

Is CVBS signal output into pin(19) of SC1101(SCART2) from pin(2) of IC1101(SW)?

YES → Check the setting of an external input device that connects of SC1101.

NO ↓

Is CVBS signal output into pin(194) of IC3001(MAIN_MICON) from pin(6) of IC1101?

YES → Check the line between IC1101 and SC1101.

NO ↓

Is video signal (VIN2) from EXT1 sent to pin (190) of IC3001 (MAIN_MICON)?

YES → Check power supply of IC3001 and peripheral circuits.

NO ↓

Is CVBS signal sent to pin (20) of SCART1(SC1102)?

YES → Check the line between SC1102 and IC3001.
(IC1502, SCART12_LINE, etc.)

NO ↓

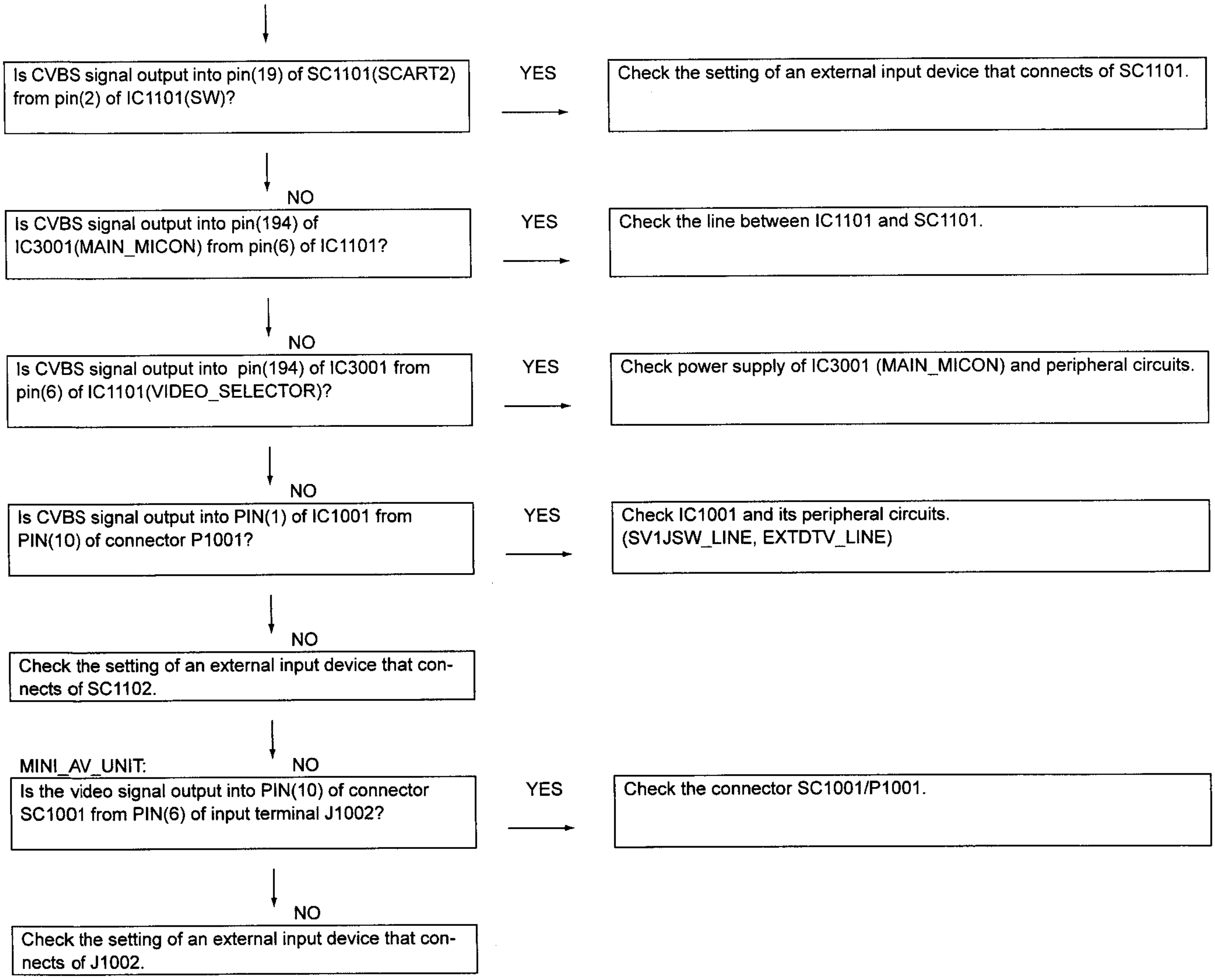
Check the setting of an external input device that connects of SC1102.

<During external connection> No picture on the monitor (4)

SCART2:

No picture from EXT3 appears on EXT2- connected monitor.

Checklist:
1) Is the Signal Type (item) in MENU-Option-Input Select equal to Signal Type of an external device? ... Set it to “CVBS”, “Y/C” or “RGB”.
2) The picture is sent to the monitor in a CVBS signal if the source during display is TV, CVBS or Y/C of EXT1-3.
When sent by component, etc., that signal is not sent to the monitor.
3) When the monitor picture is not sent and is not displayed on the monitor, refer to “No picture” for each terminal.
4) The video output from EXT1 is not the monitor output (output of the picture now watching).
The picture of the last selected TV channel is always sent to EXT1. (Specification)



Is CVBS signal output into pin(19) of SC1101(SCART2) from pin(2) of IC1101(SW)?
YES → Check the setting of an external input device that connects of SC1101.

NO ↓

Is CVBS signal output into pin(194) of IC3001(MAIN_MICON) from pin(6) of IC1101?
YES → Check the line between IC1101 and SC1101.

NO ↓

Is CVBS signal output into pin(194) of IC3001 from pin(6) of IC1101(VIDEO_SELECTOR)?
YES → Check power supply of IC3001 (MAIN_MICON) and peripheral circuits.

NO ↓

Is CVBS signal output into PIN(1) of IC1001 from PIN(10) of connector P1001?
YES → Check IC1001 and its peripheral circuits. (SV1JSW_LINE, EXTDTV_LINE)

NO ↓

Check the setting of an external input device that connects of SC1102.

NO ↓

MINI_AV_UNIT:

Is the video signal output into PIN(10) of connector SC1001 from PIN(6) of input terminal J1002?
YES → Check the connector SC1001/P1001.

NO ↓

Check the setting of an external input device that connects of J1002.

CHAPTER 5. MAJOR IC INFORMATIONS

[1] MAJOR IC INFORMATIONS

1. IC207 (RH-iXB964WJZZQ)

The STv0362 is a single-chip demodulator using COFDM (coded orthogonal frequency division Multiplexing) and is intended for digital terrestrial receivers using compressed video, sound and data services. It converts IF or base band differential signals to MPEG-2 format by processing OFDM carriers.

The STv0362 is fully compliant with the DVB-T specification (ETS 300 744) and Nor Dig Unified specification.

Pin No.	Pin Name	I/O	Pin Function
Clock and resets			
32	NOT_RESET	I	Hardware reset, active low
15	XTAL_I	I	Analog Crystal oscillator input/external clock (2.5 V)
14	XTAL_O	O	Analog Crystal oscillator output
13	VDDA_2V5	---	Supply Analog oscillator supply (2.5 V)
16	VDDA_2V5	---	Supply Analog PLL supply (2.5 V)
Analog interface			
1	RF_LEVEL	---	ADC 8 input for RF level monitoring
2	VDDA_2V5	---	Analog ADC 8 supply (2.5 V)
3	QP	---	Positive Q analog input for baseband configuration
4	QM	---	Negative Q analog input for baseband configuration
5	VDDA_ISO	---	Analog ISO nwell polarization (2.5 V)
6	VDDA_2V5	---	Analog ADC 12 supply (2.5 V)
7	REFP	---	Internal positive reference
8	REFM	---	Internal negative reference
9	INCM	---	Internal common mode
10	IM	---	Negative I analog input for IF and baseband configuration
11	IP	---	Positive I analog input for IF and baseband configuration
12	VDDA_1.0	---	Analog supply (1.0 V)
I2C interface			
29	SDA	I/O	Serial data (open drain)
30	SCL	I	Serial clock (open drain)
21	SDAT	I/O	SDA tuner (open drain)
20	SCLT	I	SCL tuner
MPEG interface			
43	D7	O	Serial MPEG data or parallel MPEG data (bit 7)
42	D6	O	Parallel MPEG data (bit 6)
40	D5	O	Parallel MPEG data (bit 5)
39	D4	O	Parallel MPEG data (bit 4)
37	D3	O	Parallel MPEG data (bit 3)
36	D2	O	Parallel MPEG data (bit 2)
35	D1	O	Parallel MPEG data (bit 1)
33	D0	O	Parallel MPEG data (bit 0)
44	CLK_OUT	O	MPEG byte or bit clock
46	STR_OUT	O	MPEG first byte sync
47	D/NOT_P	O	MPEG data valid/parity
48	ERROR	O	MPEG packet error
Front end controls			
18	AGC_RF	I/O	RF AGC control ΣΔ (5 V tolerant)
17	AGC_IF	I/O	IF AGC control ΣΔ (5 V tolerant)
64	TEST	I/O	Reserved test mode, must be grounded.
27	GPIO0	I/O	General-purpose input/output port 0. Reserved test mode, must be grounded.
49	GPIO1	I/O	General-purpose input/output port 1
60	GPIO2	I/O	General-purpose input/output port 2 or lock indicator
59	GPIO3	I/O	General-purpose input/output port 3 or lock indicator
58	GPIO4	I/O	General-purpose input/output port 4
57	GPIO5	I/O	General-purpose input/output port 5
54	GPIO6	I/O	General-purpose input/output port 6
53	GPIO7	I/O	General-purpose input/output port 7
52	GPIO8	I/O	General-purpose input/output port 8. Reserved test mode, must be grounded.
61	GPIO9	I/O	General-purpose input/output port 9
23	AUX_CLK	I/O	Auxiliary clock
25	CS0	I	Chip select LSB

Pin No.	Pin Name	I/O	Pin Function
26	CS1	I	Chip select MSB
Power supply			
19, 24, 31, 38, 45, 51, 55, 62	VDD_1V0	---	Digital core supply (1.0 V)
22, 28, 34, 41, 50, 56, 63	VDD_3V3	---	Digital I/O supply (3.3 V)

2. IC1301 (VHINJM2750M-1Y)

The NJM2750 is a 4-input/1-output stereo audio selector. It contains a switch operational amplifier and shows lower noise, lower distortion and higher channel separation than an ordinary multiplexer or analog switch.

Description:

- Operating voltage (4.7 - 13V)
- 4-input/1-output audio selector
- Stereo 2-channel
- Low output noise (-110dBV typ.)
- Low distortion (0.005% typ.)

Pin No.	Pin Name	I/O	Pin Function
1	IN1a	I	A-ch input selector 1.
2	CNT1	I	control 1.
3	IN2a	I	A-ch input selector 2.
4	CNT2	I	control 2.
5	IN4a	I	A-ch input selector 4.
6	IN1b	I	B-ch input selector 1.
7	IN2b	I	B-ch input selector 2.
8	IN4b	I	B-ch input selector 4.
9	IN3b	I	B-ch input selector 3.
10	(N.C)	---	No connection.
11	OUTb	O	B-ch output.
12	Vref	I	Reference voltage.
13	IN3a	I	Ach input selector 3.
14	V+	---	Power supply.
15	OUTa	O	A-ch output.
16	GND	---	Ground.

3. IC1401 (VHISM5309AV-1Y)

The SM5309A is a 3ch video buffer with a built-in 5th-order low pass filter. The cutoff frequency of the low pass filter can be adjusted between 4MHz and 40MHz in 256 steps. The low pass filter supports analog inputs/outputs of video signal device of 480i to 1080i format. When it is used as an input system, it functions as an antialiasing filter of the rear-stage ADC system. If used as an output system, aliasing noise from the video DAC or exogenous noise is eliminated, and the terminating resistance of up to 300Ω can be driven. The cutoff frequency or signal input method can be controlled by I2C-BUS.

Description:

- Supply voltage: Analog: 4.75 - 5.25V
  Digital: 3.0 - 5.5V
- Low pass filter function where cutoff frequency can be adjusted in 256 steps
  Cutoff frequency range: 4MHz - 40MHz (RISET = 1.8kΩ)
- Filter bypath mode function supporting the resolution of SXGA
- Switchable to the half fc mode suitable for the component signal (CH-2, CH-3)
- 2-input multiplexer function (switchable by the I2C-BUS or MUXSEL terminal)
- For the video input terminal, the sync-tip clamp/bias/direct input can be selected per channel.
- Possible to drive the terminating resistance of up to 300Ω
- Output gain: 0dB
- Power down function
  - Consumption current at power down: 1mA or less
- Control by I2C-BUS interface
  - Transfer rate: First mode (400kbit/s) supported

Pin No.	Pin Name	I/O	Pin Function
1	IN1A	I	Video signal input terminal (CH-1, A input)
2	IN1B	I	Video signal input terminal (CH-1, B input)
3	GND	---	Ground.
4	ISET	---	Resister (RISET) connection terminal for internal current setting.

Pin No.	Pin Name	I/O	Pin Function
5	NC	---	No connection.
6	IN2A	I	Video signal input terminal (CH-2, A input)
7	IN2B	I	Video signal input terminal (CH-2, B input)
8	VCC	---	Analog power supply.
9	IN3A	I	Video signal input terminal (CH-3, A input)
10	IN3B	I	Video signal input terminal (CH-3, B input)
11	MUXSEL	I	Input multiplexer select terminal.
12	SCL	I	I2C clock signal input.
13	SDA	I/O	I2C data signal in-output.
14	VDD	---	Digital power supply.
15	GND	---	Ground.
16	OUT3	O	Video signal output terminal (CH-3)
17	VCC	---	Analog power supply.
18	OUT2	O	Video signal output terminal (CH-2)
19	GND	---	Ground.
20	OUT1	O	Video signal output terminal (CH-1)
21	VCC	---	Analog power supply.
22	REF2	O	Internal reference voltage 2.
23	REF1	O	Internal reference voltage 1.
24	ADS	I	I2C slave address setting terminal (3 states).

4. IC1501 (VHIISL83220-1Y)

+/-15kV ESD Protected, +3V to +5.5V, 1Microamp, 250kbps, RS-232 Transmitters/Receivers.

The ISL83220E is a 3.0V to 5.5V powered RS-232 transmitter/ receiver which meets EIA/TIA-232 and V.28/ V.24 specifications, even at VCC = 3.0V. Additionally, it provides 15kV ESD protection (IEC 1000-4-2 Air Gap and Human Body Model) on transmitter outputs and receiver inputs (RS-232 pins). Targeted applications are PDAs, Palmtops, and notebook and laptop computers where the low operational, and even lower standby, power consumption is critical. Efficient on-chip charge pumps, coupled with a manual power down function, reduce the standby supply current to a 1 A trickle. Small footprint packaging, and the use of small, low value capacitors ensure board space savings as well. Data rates greater than 250kbps are guaranteed at worst case load conditions. This family is fully compatible with 3.3V only systems, mixed 3.3V and 5.0V systems, and 5.0V only systems.

Pin No.	Pin Name	I/O	Pin Function
1	EN	I	Active low receiver enable control; doesn't disable ROUTB outputs.
2	C1+	---	External capacitor (voltage doubler) is connected to this lead.
3	V+	---	Internally generated positive transmitter supply.
4	C1-	---	External capacitor (voltage doubler) is connected to this lead.
5	C2+	---	External capacitor (voltage inverter) is connected to this lead.
6	C2-	---	External capacitor (voltage inverter) is connected to this lead.
7	V-	---	Internally generated negative transmitter supply.
8	RIN	I	±15kV ESD Protected, RS-232 compatible receiver inputs.
9	ROUT	O	TTL/CMOS level receiver outputs.
10	N.C.	---	No connection.
11	TIN	I	TTL/CMOS compatible transmitter Inputs.
12	N.C.	---	No connection.
13	TOUT	O	±15kV ESD Protected, RS-232 level transmitter outputs.
14	GND	---	Ground.
15	VCC	---	System power supply input.
16	SHDN	I	Active low input shuts down transmitters and on-board power supply, to place device in low power mode.

5. IC1702/1735/1745 (VHILV5805M+-1Y)

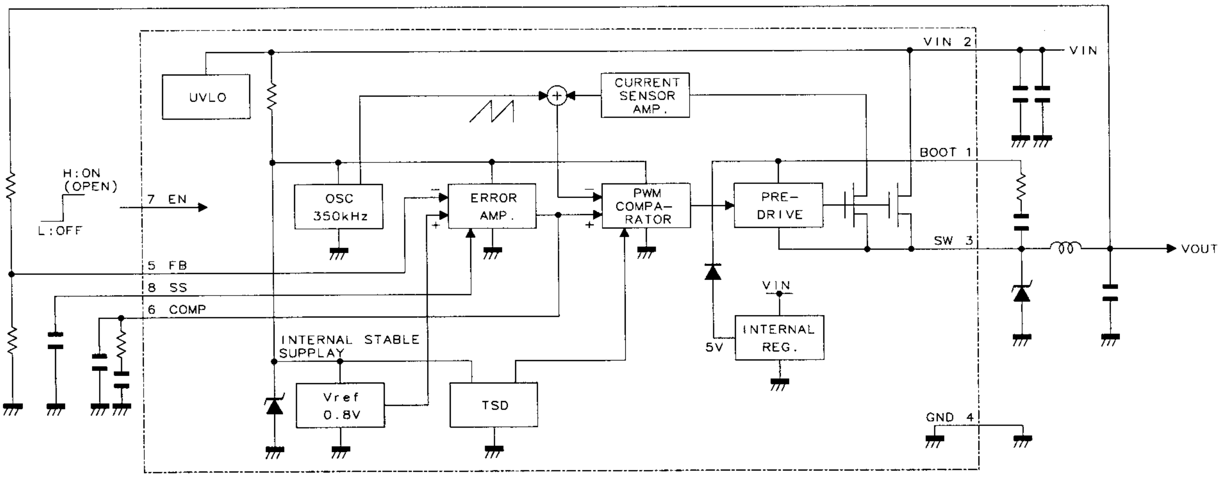
Step-down DC-DC converter

This is a 1ch step-down switching regulator. It incorporates 0.2ΩFET on the upper side and realizes high-efficiency operation for large output current. Since the current mode control method is adopted, good load current response and easy phase compensation are available.

The standby mode can be entered using the ON/OFF terminal. The load device is protected by the pulse-by-pulse or current protection and overheat protection function. Soft start becomes possible by applying capacitance to the soft start terminal.

Pin No.	Pin Name	I/O	Pin Function
1	BOOT	---	Upper part MOS transistor boot strap capacity connection terminal.
2	VIN	I	Power voltage supply terminal.
3	SW	O	Power Switch terminal.
4	GND	---	Ground.
5	FB	I	Feedback terminal.
6	COMP	---	Phase amends terminal.
7	EN	I	Enable terminal.
8	SS	I	Soft start terminal.

VHILV5805M+-1Y



6. IC1951 (VHiSii9025+-1Q)

The Sii9025 is a compliant with the latest HDMI 1.2 (High Definition Multimedia Interface) specification.

Backward compatibility with DVI 1.0 allows HDMI systems to connect to existing DVI 1.0 hosts.

The Sil9025 is capable of receiving and outputting two channel digital audio at up to 192 kHz- an excellent solution for Digital TVs.

An S/PDIF port supports up to 192 kHz audio.

The Sil9025 also comes pre-programmed with HDCP keys, greatly simplifying the manufacturing process, while providing the highest level of HDCP key security.

Description:

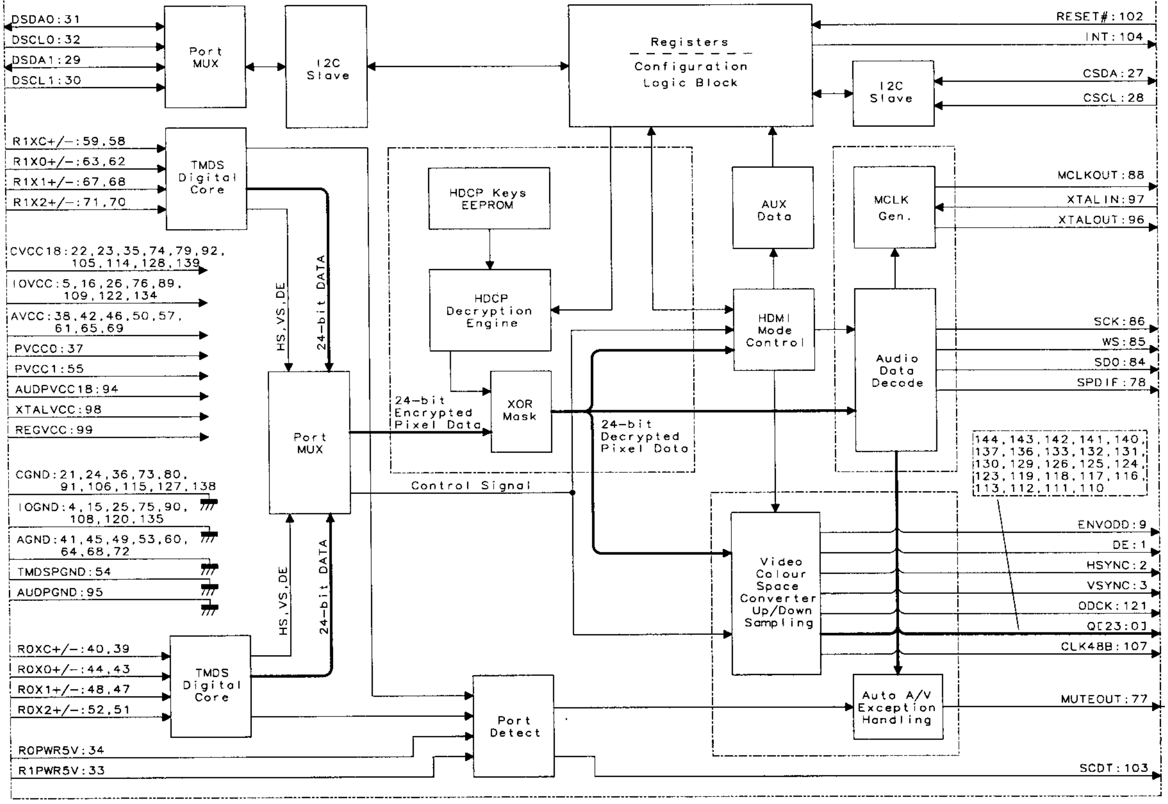
- Dual-Input HDMI 1.2, HDCP 1.1 and DVI 1.0 compliant receiver.
- Integrated TMDSR core.
- Digital video interface supports video processors:
  24-bit RGB/YCbCr 4:4:4
  16/20/24-bit YCbCr 4:2:2
  8/10/12-bit YCbCr 4:2:2 (ITU BT.656)
  12-bit DMO (Digital Multimedia Output) RGB/YCbCr 4:4:4 (clocked with rising & falling edges)
  Color Space Conversion for both RGB-to-YCbCr and YCbCr-to-RGB (both 601 and 709)
  Auto video mode configuration simplifies system firmware design.
- Digital audio interface supports high-end audio systems:
  One programmable I2S output for connection to low-cost DACs at 32-192kHz.
  S/PDIF output supports PCM, Dolby Digital, DTS digital audio transmission (32-192kHz Fs) using IEC60958 and IEC61937.
  Auto audio error detection with programmable soft mute.
- Integrated HDCP decryption engine for receiving protected audio and video content.

- HDCP Built in Self Test (BIST) lowers cost to test HDCP operation.
- Pre-programmed HDCP keys provide highest level of key security, simplifies manufacturing.

Pin No.	Pin Name	I/O	Pin Function
Digital Video Output Pins.			
144, 143, 142, 141, 140, 137, 136, 133, 132, 131, 130, 129, 126, 125, 124, 123, 119, 118, 117, 116, 113, 112, 111, 110	Q0-23	O	24-bit Output Pixel Data Bus.
1	DE	O	Data enable.
2	HSYNC	O	Horizontal Sync Output control signal.
3	VSYNC	O	Vertical Sync Output control signal.
121	ODCK	O	Output Data Clock.
Digital Audio Output Pins.			
97	XTALIN	I	Crystal Clock Input.
96	XTALOUT	O	Crystal Clock Output.
88	MCLKOUT	O	Audio Master Clock Output.
86	SCK	O	I2S Serial Clock Output.
85	WS	O	I2S Word Select Output.
84	SD0	O	I2S Serial Data Output.
78	SPDIF	O	S/PDIF Audio Output.
77	MUTEOUT	O	Mute Audio Output.
Configuration/Programming Pins.			
104	INT	O	Interrupt Output.
102	RESET#	I	Reset Pin. Active LOW. 5V Tolerant.
32	DSCL0	I	DDCI2C Clock for Port 0. 5V Tolerant.
31	DSDA0	I/O	DDCI2C Data for Port 0. 5V Tolerant.
30	DSCL0	I	DDCI2C Clock for Port 1. 5V Tolerant.
29	DSDA1	I/O	DDCI2C Data for Port 1. 5V Tolerant.
28	CSCL	I	Configuration I2C Clock. 5V Tolerant.
27	CSDA	I/O	Configuration I2C Data. 5V Tolerant.
103	SCDT	O	Indicates active video at HDMI input port.
107	CLK48B	I/O	Data Bus Latch Enable.
34	R0PWR5V	I	Port 0 Transmitter Detect. 5V Tolerant.
33	R1PWR5V	I	Port 1 Transmitter Detect. 5V Tolerant.
101	RSVDL	I	Reserved, must be tied LOW.
56	RSVD_A		Reserved Pin, leave unconnected.
6, 7, 8, 10, 11, 12, 13, 14, 17, 18, 19, 20, 81, 82, 83, 87, 93, 100	NC	---	No internal connection.
9	EVNODD	O	Indicates. Even or Odd field for interlaced formats. Polarity programmable in register.
Differential Signal Data Pins.			
40	R0XC+	I	HDMI Port 0. TMDS input clock pair.
39	R0XC-	I	
44	R0X0+	I	HDMI Port 0. TMDS input data pair.
43	R0X0-	I	
48	R0X1+	I	HDMI Port 0. TMDS input data pair.
47	R0X1-	I	
52	R0X2+	I	HDMI Port 0. TMDS input data pair.
51	R0X2-	I	
59	R1XC+	I	HDMI Port 1. TMDS input clock pair.
58	R1XC-	I	
63	R1X0+	I	HDMI Port 1. TMDS input data pair.
62	R1X0-	I	
67	R1X1+	I	HDMI Port 1. TMDS input data pair.
66	R1X1-	I	
71	R1X2+	I	HDMI Port 1. TMDS input data pair.
70	R1X2-	I	
Power and Ground Pins.			
22, 23, 35, 74, 79, 92, 105, 114, 128, 139	CVCC18	---	Digital Logic VCC.
21, 24, 36, 73, 80, 91, 106, 115, 127, 138	CGND	---	Digital Logic GND.
5, 16, 26, 76, 89, 109, 122, 134	IOVCC	---	Input/Output Pin Supply(3.3V).
4, 15, 25, 75, 90, 108, 120, 135	IOGND	---	Input/Output Pin Ground.
38, 42, 46, 50, 57, 61, 65, 69	AVCC	---	TMDS Analog VCC.
41, 45, 49, 53, 60, 64, 68, 72	AGND	---	TMDS Analog GND.
37	PVCC0	---	TMDS Port 0 PLL VCC.
55	PVCC1	---	TMDS Port 1 PLL VCC.

Pin No.	Pin Name	I/O	Pin Function
54	TMDSPGND	---	TMDS PLL GND.
94	AUDPVCC18	---	ACR PLL VCC.
95	AUDPGND	---	ACR PLL GND.
98	XTALVCC	---	ACR PLL Crystal Input VCC.
99	REGVCC	---	ACR PLL Regulator VCC.

VHIS119025+-1Q
HDMI RECEIVER


DSDA0:31
DSCL0:32
DSDA1:29
DSCL1:30
Port MUX
I2C Slave
Registers
Configuration Logic Block
RESET#:102
INT:104
I2C Slave
CSDA:27
CSCL:28
R1XC+/-:59,58
R1X0+/-:63,62
R1X1+/-:67,68
R1X2+/-:71,70
TMDS Digital Core
HDCP Keys EEPROM
AUX Data
MCLK Gen.
MCLKOUT:88
XTALIN:97
XTALOUT:96
CVCC18:22,23,35,74,79,92,105,114,128,139
IOVCC:5,16,26,76,89,109,122,134
AVCC:38,42,46,50,57,61,65,69
PVCC0:37
PVCC1:55
AUDPVCC18:94
XTALVCC:98
REGVCC:99
HS,VS,DE
24-bit DATA
HDCP Decryption Engine
HDMI Mode Control
Audio Data Decode
SCK:86
WS:85
SDO:84
SPDIF:78
Port MUX
24-bit Encrypted Pixel Data
XOR Mask
24-bit Decrypted Pixel Data
144,143,142,141,140,137,136,133,132,131,130,129,126,125,124,123,119,118,117,116,113,112,111,110
CGND:21,24,36,73,80,91,106,115,127,138
Control Signal
IOGND:4,15,25,75,90,108,120,135
AGND:41,45,49,53,60,64,68,72
TMDSPGND:54
AUDPGND:95
HS,VS,DE
24-bit DATA
Video Colour Space Converter Up/Down Sampling
ENVODD:9
DE:1
HSYNC:2
VSYNC:3
ODCK:121
Q[23:0]
CLK48B:107
R0XC+/-:40,39
R0X0+/-:44,43
R0X1+/-:48,47
R0X2+/-:52,51
TMDS Digital Core
Port Detect
Auto A/V Exception Handling
MUTEOUT:77
R0PWR5V:34
R1PWR5V:33
SCDT:103

7. IC2302 (RH-IXC009WJZZQ)

The RH-IXC009WJZZQ is a high-speed and high-performance 8-bit single-chip microcomputer with a built-in 61440-byte flash memory.

In this equipment, the R/C LED on the AVC side and system on the display side are controlled.

Pin No.	Pin Name	I/O	Pin Function
1	GND	---	Ground.
2	8MHz_IN	I	Crystal oscillator input.
3	8MHz_OUT	O	Crystal oscillator output.
4	TEST	I	Terminal for shipping test. Fixed to “L” level.
5	3.3V	---	Power supply (+3.3V).
6	FRC_BUS_SW	O	N.C.
7	32kHz_OUT	O	N.C.
8	RESET	I	RESET input terminal.
9	P20	---	N.C.
10	P00	---	N.C.
11	UART-RXD1	I	For flash write.
12	UART-TXD1	O	For flash write.
13	CEC-IN	I	CEC.
14	P04	I	N.C.
15	P05	O	N.C.
16	CEC-OUT	O	N.C.
17	CEC-IN2	I	N.C.
18	VAREF	---	Power supply (+3.3V).
19	AVDD	---	Power supply (+3.3V).
20	AIN0	I	Temperature sensor.
21	AIN1	I	N.C.

LC32D44E/S/RU-BK/GY (1st Eddition)

Pin No.	Pin Name	I/O	Pin Function
22	AIN2	I	N.C.
23	AIN3	I	N.C.
24	AC_DET	I	Power supply detection.
25	ANT_ERR	I	ANT5V short detection.
26	BL_ERR	I	Backlight detection.
27	SV1JSW	I	S-terminal detection.
28	QS_EN	O	Panel controller QS.
29	FRAME	O	50/60Hz select.
30	T1	I	Panel controller TEMP.
31	T2	I	Panel controller TEMP.
32	T3	I	Panel controller TEMP.
33	BANK_SEL	O	Panel controller
34	R/L	O	Panel controller. Flip horizontal.
35	U/D	O	Panel controller. Flip vertical.
36	EXT_DTV	O	DTV_etc. select (H,V,Audio)
37	HDMI_PC	O	HDMI-PC select (H,V,Audio)
38	SCART12	O	SCARTselect.
39	PE	O	Panel enable.
40	HP_MUTE	O	Mute. Headphono.
41	ANT+5V_SW	O	ANT+5V control
42	DTN_BUS_SEL	O	D-TUNER I2C select
43	DTM_RST	O	DTV PWB reset
44	TCON_WP	O	Counter adjustment write-protect
45	LVDS_EN	O	N.C
46	CONT_DET	---	N.C
47	PS_ON	O	Power_on.
48	PCON1	O	DC-DC_on.
49	TEST	O	N.C
50	LCD_POW	O	N.C
51	12V_DET	O	LCD_12V detection.
52	SCL	I	I2C Slave clock
53	SDA	I/O	I2C Slave data
54	I-REQ	O	Sub-microprocessor interrupt
55	SCL_F	I	N.C. (Pull-up)
56	SDA_F	I/O	N.C. (Pull-up)
57	LEDPOW_R	O	Power R_LED ON.
58	LEDPOW_G	O	Power G_LED ON.
59	LEDSLP	O	N.C.
60	LEDOPC	O	N.C.
61	MUTE_SP	O	Mute.
62	S_MUTE	O	Mute.
63	S2_MUTE	O	Mute SCART2.
64	IREM_SW	O	N.C.

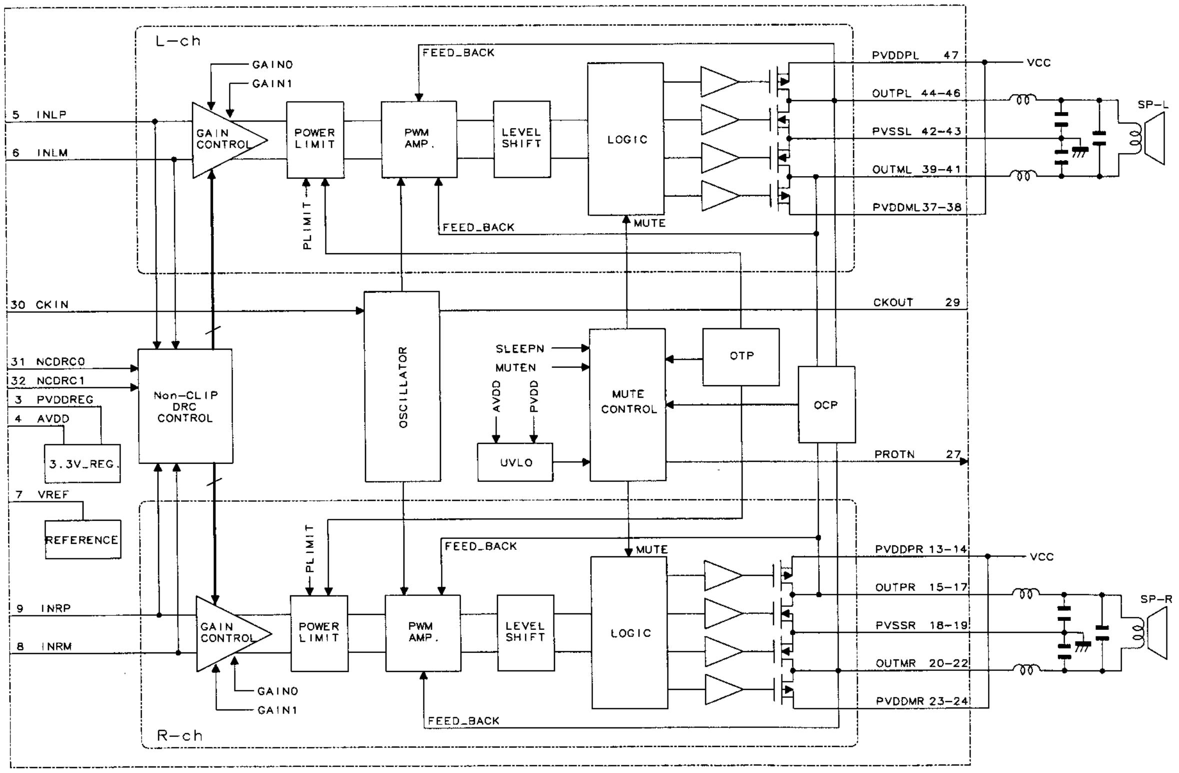
8. IC2701 (VHiYDA147SZ-1Y)

High-efficiency digital audio power amplifier IC with maximum power output of 20W (Vddp=14V, RL=4Ω) x 2ch.

It incorporates the "DRC (Dynamic range compression)" function. Since the volume is increased at low volume level and is decreased at high volume level, it is possible to prevent sudden volume change. It is also provided with the "power limiter" which can set the output limit.

Pin No.	Pin Name	I/O	Pin Function
1, 2, 12, 25, 35, 36	NC	---	No connection.
3	PVDDREG	---	Power terminal for regulator (PVDD).
4	AVDD	---	Output terminal for 3.3V regulator.
5	INLP	I	Analog input terminal (Lch+)
6	INLM	I	Analog input terminal (Lch-)
7	VREF		VREF terminal.
8	INRM	I	Analog input terminal (Rch-)
9	INRP	I	Analog input terminal (Rch+)
10	AVSS	---	GND terminal for analog.
11	PLIMIT	I	Power limit setting terminal.
13, 14	PVDDPR	---	Power terminal for digital amplifier output (Rch+).
15, 16, 17	OUTPR	O	Digital amplifier output terminal (Rch+).
18, 19	PVSSR	---	Ground terminal for digital amplifier output (Rch).
20, 21, 22	OUTMR	O	Digital amplifier output terminal (Rch-).
23, 24	PVDDMR	---	Power terminal for digital amplifier output (Rch-).
26	SLEEPN	I	Sleep control terminal.
27	PROTN	O	Error flag output terminal.
28	MUTEN	I	Mute control terminal.
29	CKOUT	O	Clock output terminal for synchronization.
30	CKIN	I	External clock input terminal.
31	NCDRC0	I	Non-clip/DRC1/DRC2 mode selection terminal 0.
32	NCDRC1	I	Non-clip/DRC1/DRC2 mode selection terminal 1.
33	GAIN0	I	GAIN setting terminal 0.
34	GAIN1	I	GAIN setting terminal 1.
37, 38	PVDDML	---	Power terminal for digital amplifier output (Lch-).
39, 40, 41	OUTML	O	Digital amplifier output terminal (Lch-).
42, 43	PVSSL	---	Ground terminal for digital amplifier output (Lch).
44, 45, 46	OUTPL	O	Digital amplifier output terminal (Lch+).
47, 48	PVDDPL	---	Power terminal for digital amplifier output (Lch+).

VHIYDA147SZ-1Y


L-ch
GAIN0
GAIN1
5 INLP
6 INLM
GAIN CONTROL
POWER LIMIT
PWM AMP.
LEVEL SHIFT
LOGIC
FEED_BACK
PLIMIT
MUTE
PVDDPL 47
OUTPL 44-46
PVSSL 42-43
OUTML 39-41
PVDDML 37-38
VCC
SP-L
30 CKIN
CKOUT 29
OSCILLATOR
SLEEPN
MUTEN
AVDD
PVDD
UVLO
MUTE CONTROL
OTP
OCP
PROTN 27
31 NCDRC0
32 NCDRC1
3 PVDDREG
4 AVDD
Non-CLIP DRC CONTROL
3.3V_REG.
7 VREF
REFERENCE
9 INRP
8 INRM
PVDDPR 13-14
OUTPR 15-17
PVSSR 18-19
OUTMR 20-22
PVDDMR 23-24
SP-R
R-ch

9. IC3001 (RH-IXC354WJZZQ)

The VCT-Pro front-end video processing unit offers 16 analog video inputs (CVBS/Y/C, RGB/Y Cr Cb) as well as digital interfaces for SDTV and DTV. Latest 3D+ comb filter generation provides highest performance for PAL/NTSC signals.

A VBI slicer, supporting up to 2000 pages of Teletext completes the analog video front end. 3D-motion-adaptive de-interlacing, temporal noise reduction and film mode detection are based on a unified memory technology.

Description:

- Stereo Decoder Audio Processing.
- Video Front-end 3D Comb filter, PC Connectivity.
- Motion Adaptive De-interlacing.
- Scaling, Display Processing and FPD Control.
- Unified Memory for Audio, Video and Text.
- Controlling, OSD and Text.

Pin No.	Pin Name	I/O	Pin Function
1	P4_6	O	TP3008
2	P4_5	O	HDMI_WPO Write-protection of HDMI_EEP.
3	P4_4	O	HDMI_RSTO HDMI reset.
4	TCLK	I	JTAG Interface Clock Input (TV Controller)
5	TDO	O	JTAG Interface Data Output (TV Controller)
6	TDI	I	JTAG Interface Data Input (TV Controller)
7	TMS	I	JTAG Interface Mode Select Input (TV Contr.)
8	RESETQ	I/O	Reset Input/Output.
9	AIN1R	I	Analog Audio 1 Input, Right.
10	AIN1L	I	Analog Audio 1 Input, Left.
11	AIN2R	I	Analog Audio 2 Input, Right.
12	AIN2L	I	Analog Audio 2 Input, Left.
13	AIN3R	I	Analog Audio 3 Input, Right.
14	AIN3L	I	Analog Audio 3 Input, Left.
15	AIN4R	I	Analog Audio 4 Input, Right.
16	AIN4L	I	Analog Audio 4 Input, Left.
17	VREFAU	---	Reference Voltage, Audio.
18	VSUP8.0AU	---	Supply Voltage Analog Audio, 8.0 V.
19	GNDA	---	Ground Analog Audio, Platform Ground.
20	SGND	---	Analog Signal GND.
21	AOUT2R	O	Analog Audio 2 Output, Right.
22	AOUT2L	O	Analog Audio 2 Output, Left.
23	AOUT1R	O	Analog Audio 1 Output, Right.
24	AOUT1L	O	Analog Audio 1 Output, Left.
25	HEADPHONER	O	Analog Headphone Output, Right.
26	HEADPHONEL	O	Analog Headphone Output, Left.
27	SPEAKERR	O	Analog Loudspeaker Output, Right.
28	SPEAKERL	O	Analog Loudspeaker Output, Left.
29	SUBWOOFER TEST	I/O	TP3001
30	VREFSIF	I	Reference Voltage, Audio SIF.
31	SIFIN+	I	Differential Sound IF Input.
32	SIFIN-	I	Differential Sound IF Input.
33	VSUP5.0	---	Supply Voltage Analog, 5.0 V.
34	GNDA	---	Ground Analog, Platform Ground.
35	GND3.3DIG	---	Ground Digital Interfaces.
36	VSUP3.3DIG	---	Supply Voltage Digital Interfaces, 3.3 V.
37	SPDIF_OUT	O	SPDIF Output.
38	I2S_DA_IN	I	Audio Bus Data Input.
39	I2S_CL	I	Audio Bus Clock Input.
40	I2S_WS	I	Audio Bus Word Strobe Input.
41	I2S_DEL_OUT	O	TP3037
42	I2S_DEL_IN	I	TP3038
43	I2S_DEL_CL	I/O	TP3039
44	I2S_DEL_WS	I/O	TP3040
45	VSUP3.3RAM	---	Supply Voltage Ram, 3.3 V.
46	GND3.3RAM	---	Ground Ram.
47	DVS	I	Digital or Analog Video VSYNC HD Input.
48	DEN	I	Digital Video Enable Input.
49	DCLK	I	Digital Video Clock Input.
50	DRI7	I	Digital Video Red 7 Input.

Pin No.	Pin Name	I/O	Pin Function
51	DRI6	I	Digital Video Red 6 Input.
52	DRI5	I	Digital Video Red 5 Input.
53	DRI4	I	Digital Video Red 4 Input.
54	DRI3	I	Digital Video Red 3 Input.
55	DRI2	I	Digital Video Red 2 Input.
56	DRI1	I	Digital Video Red 1 Input.
57	DRI0	I	Digital Video Red 0 Input (LSB).
58	DGI7	I	Digital Video Green 7 Input.
59	DGI6	I	Digital Video Green 6 Input.
60	DGI5	I	Digital Video Green 5 Input.
61	DGI4	I	Digital Video Green 4 Input.
62	DGI3	I	Digital Video Green 3 Input.
63	DGI2	I	Digital Video Green 2 Input.
64	DGI1	I	Digital Video Green 1 Input.
65	DGI0	I	Digital Video Green 0 Input (LSB).
66	DBI7	I	Digital Video Blue 7 Input.
67	DBI6	I	Digital Video Blue 6 Input.
68	DBI5	I	Digital Video Blue 5 Input.
69	DBI4	I	Digital Video Blue 4 Input.
70	DBI3	I	Digital Video Blue 3 Input.
71	DBI2	I	Digital Video Blue 2 Input.
72	DBI1	I	Digital Video Blue 1 Input.
73	DBI0	I	Digital Video Blue 0 Input (LSB).
74	GND3.3DRI	---	Ground Digital Ram Interface.
75	VSUP3.3DRI	---	Supply Voltage Digital Ram Interface, 3.3 V.
76	GND3.3COM	---	Ground Common.
77	VSUP3.3COM	---	Supply Voltage Common, 3.3V.
78	XTALIN	I	Analog Crystal Input.
79	XTALOUT	O	Analog Crystal Output.
80	CLKOUT	O	Digital 20MHz Clock Output.
81	VSO	O	TP3059
82	HSO	O	TP3058
83	SCL	I/O	I2C Bus Clock Input/Output.
84	SDA	I/O	I2C Bus Data Input/Output.
85	GND3.3FL	---	Ground Flash.
86	VSUP3.3FL	---	Supply Voltage Flash, 3.3 V.
87	CADC5	I	KEY2 operation key input.
88	CADC6	I	KEY1 operation key input.
89	P2_2	I	IRIN Remote control input.
90	P2_3	I	KEY_PSW Power switch input.
91	P2_4	O	V_TXD RS232C TX
92	P2_5	I	V_RXD RS232C RX
93	OSDV DBO2_0	I/O	TP3042
94	OSDH DBO2_1	I/O	TP3041
95	GND3.3IO1	---	Ground Digital Input/Output Port 1
96	VSUP3.3IO1	---	Supply Voltage Input/Output Port 1, 3.3 V
97	OSD_CLK	I	N.C.
98	OSD_FSW	I	N.C.
99	OSDHCS1 P3_6	I/O	TP3021
100	OSDHCS0 P3_7	I/O	TP3020
101	OSDB3 P3_5	I/O	TP3019
102	OSDB2 P3_4	I/O	TP3018
103	OSDB1	I/O	N.C.
104	OSDB0	I/O	N.C.
105	OSDG3 P3_3	I/O	TP3017
106	OSDG2 P3_2	I/O	TP3016
107	OSDG1	I/O	N.C.
108	OSDG0	I/O	N.C.
109	OSDR3 P3_1	I/O	TP3015
110	OSDR2 P3_0	I/O	TP3014
111	OSDR1	I/O	N.C.
112	OSDR0	I/O	N.C.
113	GND3.3IO1	---	Ground Digital.
114	VSUP3.3IO1	---	Supply Voltage Port 1, 3.3 V

Pin No.	Pin Name	I/O	Pin Function
115	PCS5	O	TP3045
116	PCS4	O	TP3043
117	PCS3	O	TP3044
118	PCS2	O	TP3034
119	PCS1	O	TP3033
120	PCS0	O	TP3032
121	PCLK2	O	TP3022
122	PCLK1	O	TP3031
123	GND1.8DIG	---	Ground Digital Core
124	VSUP1.8DIG	---	Supply Voltage Digital Core, 1.8 V.
125	LVDSA_4P	O	TP3030
126	LVDSA_4N	O	TP3029
127	VSUP3.3LVDS	---	Supply Digital Voltage LVDS2 Port, 3.3 V.
128	LVDSA_3P	O	LVDS Channel 1 bit 3 Positive Output.
129	LVDSA_3N	O	LVDS Channel 1 bit 3 Negative Output.
130	GND3.3LVDS	---	Ground Digital LVDS2, 3.3 V.
131	LVDSA_CLKP	O	LVDS Channel 1 Clock Positive Output.
132	LVDSA_CLKN	O	LVDS Channel 1 Clock Negative Output.
133	VSUP3.3LVDS	---	Supply Digital Voltage LVDS2, 3.3 V.
134	LVDSA_2P	O	LVDS Channel 1 bit 2 Positive Output.
135	LVDSA_2N	O	LVDS Channel 1 bit 2 Negative Output.
136	GND3.3LVDS	---	Ground Digital LVDS2, 3.3 V.
137	LVDSA_1P	O	LVDS Channel 1 bit 1 Positive Output.
138	LVDSA_1N	O	LVDS Channel 1 bit 1 Negative Output.
139	VSUP3.3LVDS	---	Supply Digital Voltage LVDS2, 3.3 V.
140	LVDSA_0P	O	LVDS Channel 1 bit 0 Positive Output.
141	LVDSA_0N	O	LVDS Channel 1 bit 0 Negative Output.
142	VSUP1.8LVDS	---	Supply Analog Voltage LVDS2, 1.8 V.
143	REXT	O	LVDS External Resistor 2.
144	GND1.8LVDS	---	Ground Analog LVDS2, 1.8 V.
145	LVDSB_3P	O	TP3028
146	LVDSB_3N	O	TP3027
147	GND3.3LVDS	---	Ground Digital LVDS2, 3.3 V.
148	LVDSBCLKP	O	TP3026
149	LVDSBCLKN	O	TP3025
150	VSUP3.3LVDS	---	Supply Digital Voltage LVDS2, 3.3 V.
151	LVDSB_2P	O	TP3024
152	LVDSB_2N	O	TP3023
153	GND3.3LVDS	---	Ground Digital LVDS2, 3.3 V.
154	LVDSB_1P	O	TP3013
155	LVDSB_1N	O	TP3012
156	VSUP3.3LVDS	---	Supply Digital Voltage LVDS2, 3.3 V.
157	LVDSB_0P	O	TP3010
158	LVDSB_0N	O	TP3011
159	CADC4	I	IF AGC For AGC adjustment.
160	CADC3	I	SLOWSW_1I SLOW SW1 input.
161	CADC2	I	SLOWSW_2I SLOW SW2 input.
162	CADC1	I	TP3009
163	GND3.3DAC	---	Ground DAC.
164	VSUP3.3DAC	---	Supply Voltage DAC, 3.3V.
165	PWM3	O	ST_RS
166	PWM2	O	BL_ON Back-light on.
167	PWM1	O	OFL1 Modulated light signal.
168	REV	O	TP3005
169	VSUP1.8FE	---	Supply Voltage Analog Video Frontend, 1.8 V.
170	VSUP3.3FE	---	Supply Voltage Analog Video Frontend, 3.3 V.
171	DHS	I	Digital Video H-Sync Input.
172	VIN21	I	Analog Video 21 B HD Input.
173	VIN20	I	Analog Video 20 G HD Input.
174	VIN19	I	Analog Video 19 R HD Input.
175	VIN18	I	Analog Video 18 Fast Blank 2 Input.
176	VIN17	I	Analog Video 17 B HD Input.
177	VIN16	I	Analog Video 16 G HD Input.
178	VIN15	I	Analog Video 15 R HD Input.

Pin No.	Pin Name	I/O	Pin Function
179	VIN13	I	Analog Video 13 B HD Input.
180	VIN12	I	Analog Video 12 G HD Input.
181	VIN11	I	Analog Video 11 R HD Input.
182	VIN9	I	Analog Video 9 Y or B SD Input.
183	VIN8	I	Analog Video 8 C or Fast Blank 1 Input.
184	VIN7	I	Analog Video 7 Y or G SD Input.
185	VSUP1.8FE	---	Supply Voltage Analog Video Frontend, 1.8 V.
186	GNDA	---	Analog Video Frontend, Platform Ground.
187	VIN6	I	Analog Video 6 C or R SD Input.
188	VIN5	I	Analog Video 5 Y/CVBS Input.
189	VIN3	I	Analog Video 3 CVBS Input.
190	VIN2	I	Analog Video 2 CVBS Input.
191	VIN1	I	Analog Video 1 CVBS Input.
192	VSUP3.3VO	---	Supply Voltage Analog Video Output, 3.3 V.
193	VOUT3	O	TP3002
194	VOUT2	O	Analog CVBS Video 2 Output.
195	VOUT1	O	Analog CVBS Video 1 Output.
196	GND3.3IO3	---	Ground Digital Input/Output Port 1.
197	VSUP3.3IO3	---	Supply Voltage Input/Output Port 1, 3.3 V.
198	656I0 P3_0	I	DTM_IRQI Interrupt from DTV.
199	656I1 P3_1	I/O	AVLINK_1
200	656I2 P3_2	I/O	AVLINK_2
201	656I3 P3_3	I/O	HDMI_INT_I Interrupt from receiver.
202	656I4 P3_4	I/O	HDMI_INT_I Interrupt from receiver.
203	656I5 P3_5	O	HOTP_CONT0 HDMI plug detection.
204	656I6 P3_6	I	MIC_IREQ Interrupt from microcomputer.
205	656I7 P3_7	O	HOTP_CONT1 HDMI plug detection.
206	656CLKI	I	N.C.
207	656CLKO	O	N.C.
208	P4_7	I	HP_PLG Headphone detection.

10. IC4001 (RH-IXC243WJZZQ)

This is a video/ audio signal processing IC (Set-top-box decoder) for digital tuner, incorporates a CPU. In this equipment, it implements GUI processing and video/audio processing for digital tuner, negotiation processing with CI-CARD, etc.

Pin No.	Pin Name	I/O	Pin Function
System pins			
138	CLK27IN	I	27 MHz crystal circuit.
139	CLK27OUT	O	27 MHz crystal circuit.
128	AUXCLKOUT	O	Auxiliary clock for general use.
130	NOT_RESET	I	System reset.
131	NOT_RSTOUT	O	Reset out.
FMI pins			
89	FMIDATA15	I/O	Bidirectional data.
90	FMIDATA14	I/O	
91	FMIDATA13	I/O	
92	FMIDATA12	I/O	
93	FMIDATA11	I/O	
94	FMIDATA10	I/O	
95	FMIDATA9	I/O	
97	FMIDATA8	I/O	
98	FMIDATA7	I/O	
99	FMIDATA6	I/O	
100	FMIDATA5	I/O	
103	FMIDATA4	I/O	
104	FMIDATA3	I/O	
105	FMIDATA2	I/O	
106	FMIDATA1	I/O	
107	FMIDATA0	I/O	
56	FMIADDR23	O	Address (8 Mbyte).
57	FMIADDR22	O	
58	FMIADDR21	O	
59	FMIADDR20	O	
60	FMIADDR19	O	
61	FMIADDR18	O	
62	FMIADDR17	O	
63	FMIADDR16	O	
64	FMIADDR15	O	
65	FMIADDR14	O	
66	FMIADDR13	O	
69	FMIADDR12	O	
70	FMIADDR11	O	
71	FMIADDR10	O	
73	FMIADDR9	O	
74	FMIADDR8	O	
75	FMIADDR7	O	
76	FMIADDR6	O	
77	FMIADDR5	O	
78	FMIADDR4	O	
79	FMIADDR3	O	
80	FMIADDR2	O	
81	FMIADDR1	O	
52	NOT_FMICSD	O	Chip select.
51	NOT_FMICSC	O	
50	NOT_FMICSB	O	
49	NOT_FMICSA	O	
88	NOT_FMIOE	O	Output enable.
86	NOT_FMIBE1	O	Byte enable.
87	NOT_FMIBE0	O	
85	NOT_FMILBA	O	Flash device load burst address.
83	FMIRDNOTWR	O	Read not write.
82	FMIWAIT	I	Wait input (extend read/write cycle).
53	FMIFLASHCLK	O	Peripheral clock.
LMI pins			

Pin No.	Pin Name	I/O	Pin Function
201	LMIDATA15	I/O	Bidirectional data.
199	LMIDATA14	I/O	
198	LMIDATA13	I/O	
197	LMIDATA12	I/O	
194	LMIDATA11	I/O	
192	LMIDATA10	I/O	
191	LMIDATA9	I/O	
190	LMIDATA8	I/O	
180	LMIDATA7	I/O	
178	LMIDATA6	I/O	
175	LMIDATA5	I/O	
174	LMIDATA4	I/O	
171	LMIDATA3	I/O	Bidirectional data.
169	LMIDATA2	I/O	
168	LMIDATA1	I/O	
167	LMIDATA0	I/O	
208	LMIADDR12	O	Address.
209	LMIADDR11	O	
157	LMIADDR10	O	
210	LMIADDR9	O	
211	LMIADDR8	O	
213	LMIADDR7	O	
214	LMIADDR6	O	
215	LMIADDR5	O	
216	LMIADDR4	O	
150	LMIADDR3	O	
152	LMIADDR2	O	
153	LMIADDR1	O	
154	LMIADDR0	O	
159	LMIBA1	O	Bank select.
160	LMIBA0	O	
182	LMIDQM0	O	Data I/O mask lower.
186	LMIDQM1	O	Data I/O mask upper.
181	LMIDQS0	O	Data strobe lower.
188	LMIDQS1	O	Data strobe upper.
162	NOT_LMICS	O	Chip select.
163	NOT_LMIRAS	O	Latch row address strobe.
164	NOT_LMICAS	O	Latch column address strobe.
206	LMICLKEN	O	Clock enable.
203	LMICLK	O	Clock.
202	NOT_LMICLK	O	Inverted clock.
183	LMI_VREF	I	Input reference voltage.
166	LMIRDNOTWR	O	Write enable signal.
Analog audio DAC pins			
28	OUTLMINUS	O	Audio DAC left differential current output.
24	OUTRMINUS	O	Audio DAC right differential current output.
29	OUTLPLUS	O	Audio DAC left differential current output.
25	OUTRPLUS	O	Audio DAC right differential current output.
23	VGBOUT	O	Audio DAC filtered output reference voltage.
26	IREFADAC	I	Current reference for Audio DAC.
Digital audio pins			
37	S/PDIF	O	Digital audio.
Analog video DAC pins			
15	VDAC1OUT	O	Video DAC outputs.
16	VDAC2OUT	O	
17	VDAC3OUT	O	
18	VDAC4OUT	O	
14	GNDREXTVDAC	I	Video DAC external resistor ground.
13	REXTVDACRGB	I	VDAC external resistor input.
Transport stream pins			
35	TS0INBITCLK	I	TSIN0 Parallel//Serial in.
33	TS0INBITCLKVALID	I	
34	TS0INPACKETCLK	I	
36	TS0INDATA7	I	

Pin No.	Pin Name	I/O	Pin Function
Programmable I/O pins			
127	POI0[7]	I/O	PIO PORT 0
126	PIO0[6]		
123	PIO0[5]		
122	PIO0[4]		
121	PIO0[3]		
120	PIO0[2]		
119	PIO0[1]		
118	PIO0[0]		
46	PIO1[7]	I/O	PIO PORT 1
45	PIO1[6]		
44	PIO1[5]		
43	PIO1[4]		
41	PIO1[3]		
40	PIO1[2]		
39	PIO1[1]		
38	PIO1[0]		
117	PIO2[7]	I/O	PIO PORT 2
116	PIO2[6]		
115	PIO2[5]		
114	PIO2[4]		
111	PIO2[3]		
110	PIO2[2]		
109	PIO2[1]		
108	PIO2[0]		
12	PIO3[6]	I/O	PIO PORT 3
11	PIO3[5]		
10	PIO3[4]		
7	PIO3[3]		
6	PIO3[2]		
5	PIO3[1]		
4	PIO3[0]		
JTAG test access port (TAP) pins			
134	TDI	I	TAP boundary scan test data input.
133	TMS	I	TAP boundary scan test mode select.
137	TCK	I	TAP boundary scan test clock.
135	NOT_TRST	I	TAP boundary scan test logic reset.
132	TDO	O	TAP boundary scan test data output.
DCU pins			
1	DCUTRIGGERIN	I	External trigger input to DCU.
2	DCUTRIGGEROUT	O	Signal to trigger external debug circuitry.
Analog power supply pins (Audio DAC)			
32	VDDAADAC	---	3.3v power for audio DAC.
31	GNDAADAC	---	Ground for audio DAC.
30	VSSUBANA	---	Substrate ground for all DACs.
Analog power supply pins (Video DAC)			
22	VDDDAC0	---	3.3 V power supply for video DAC 1, 2 and 3.
21	VDDDAC1	---	3.3 V power supply for CVBS video DAC 4.
19	VSSDAC0	---	Ground for video DAC 1, 2 and 3.
20	VSSDAC1	---	Ground for video DAC 4.
Analog power supply pins (Frequency synthesizers)			
140	VDDDFS1	---	Frequency synthesizer 1.2 V digital power dedicated to frequency synthesizer 1.
141	GNDDFS1	---	Frequency synthesizer 1.2 V digital ground dedicated to frequency synthesizer 1.
142	VCCAFS	---	Frequency synthesizer 1.2 V analog power shared between frequency synthesizer 1 and 2.
143	GNDAFS	---	Frequency synthesizer 1.2 V analog ground shared between frequency synthesizer 1 and 2.
144	GNDDFS2	---	Frequency synthesizer 1.2 V digital ground dedicated to frequency synthesizer 2.
145	VDDDFS2	---	Frequency synthesizer 1.2 V digital power dedicated to frequency synthesizer 2.
Analog power supply pins (PLLs)			
146	VCCAPLL	---	1.2V PLL1 analog power.
147	GNDAPLL	---	1.2V PLL1 analog ground.
148	GNDAPLL1	---	1.2V PLL2 analog ground.
149	VCCAPLL1	---	1.2V PLL2 analog power.
Analog power supply pins (LMI SDRAM)			

Pin No.	Pin Name	I/O	Pin Function
184	VDDDLL	---	1.2 V for DLL.
185	GNDDLL	---	Ground for DLL.
176	VDDDE0	---	1.2 V for delay element 1.
177	VSSDE0	---	Ground for delay element 1.
196	VDDDE1	---	1.2 V for delay element 2.
195	VSSDE1	---	Ground for delay element 2.
Digital power supply pins			
8, 47, 67, 101, 124, 155, 173, 204	VDD12	---	1.2 V digital power supply.
151, 158, 165, 170, 179, 187, 193, 200, 207, 212	VDD25	---	2.5 V power supply when connected to DDR SDRAM on the LMI interface.
3, 42, 55, 72, 84, 96, 113, 129	VDD33	---	3.3 V power supply.
EP1, 9, 27, 48, 54, 68, 102, 112, 125, 136, 156, 161, 172, 189, 205	GND	---	Ground.

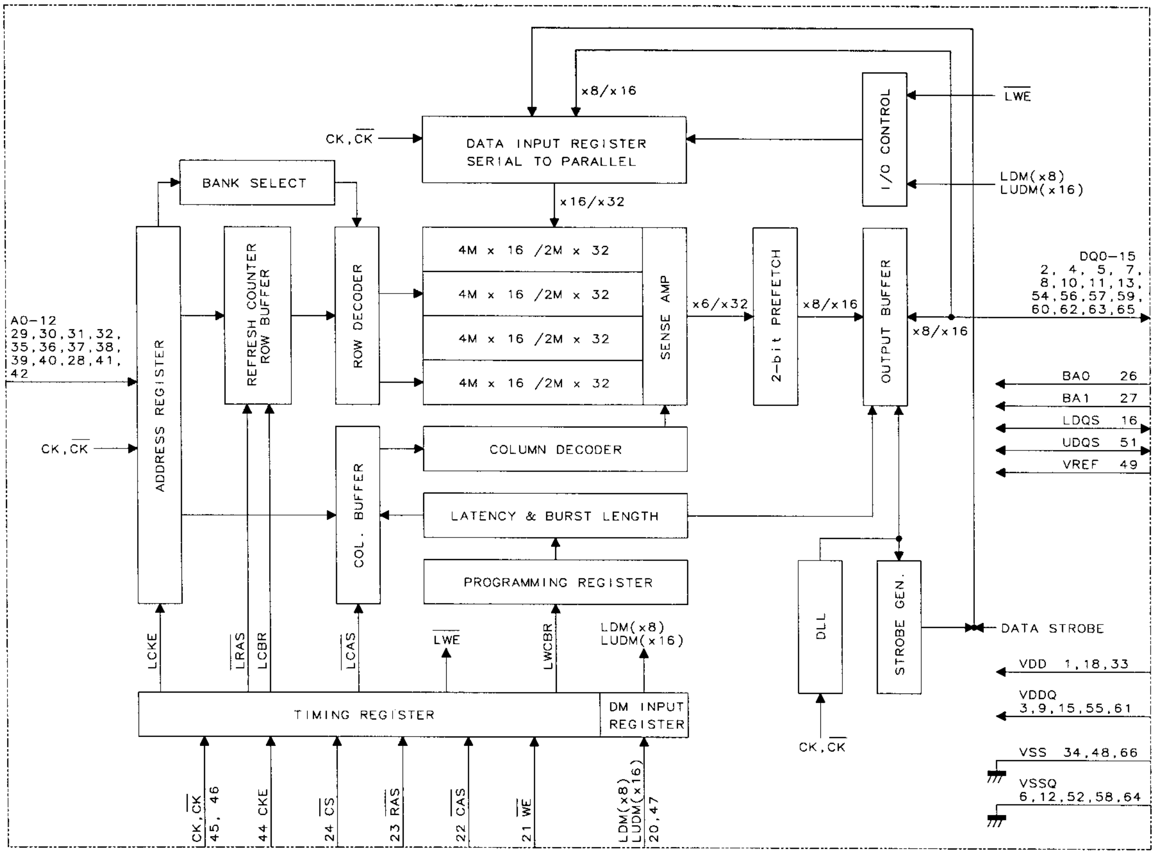
11. IC4201 (RH-IXB765WJQZQ)

This IC is 256Mb H-die DDR SDRAM (static dynamic random-access memory) IC.

In this equipment, it is used for LMI memory (for image processing), and data is used for operation of the Set-top-box decoder.

Pin No.	Pin Name	I/O	Pin Function
45, 46	CK, CK	I	Clock : CK and CK are differential clock inputs.
44	CKE	I	Clock Enable : CKE HIGH activates, and CKE LOW deactivates internal clock signals, and device input buffers and output drivers.
24	CS	I	Chip Select : CS enables (registered LOW) and disables (registered HIGH) the command decoder.
23-21	RAS, CAS, WE	I	Command Inputs : RAS, CAS and WE (along with CS) define the command beingentered.
20, 47	LDM, (UDM)	I	Input Data Mask.
26, 27	BA0, BA1	I	Bank Addres Inputs.
29, 30, 31, 32, 35, 36, 37, 38, 39, 40, 28, 41, 42	A [0:12]	I	Address Inputs.
2, 4, 5, 7, 8, 10, 11, 13, 54, 56, 57, 59, 60, 62, 63, 65	DQ[0:15]	I/O	Data Input/Output : Data bus.
16, 51	LDQS, (U)DQS	I/O	Data Strobe : Output with read data, input with write data.
14, 17, 19, 25, 43, 50, 53	NC	---	No Connect : No internal electrical connection is present.
3, 9, 15, 55, 61	VDDQ	---	DQ Power Supply.
6, 12, 52, 58, 64	VSSQ	---	DQ Ground.
1, 18, 33	VDD	---	Power Supply.
34, 48, 66	VSS	---	Ground.
49	VREF	I	SSTL_2 reference voltage.

RH-IXB765WJQZQ
256Mb H-die SDRAM


x8/x16
LWE
CK,CK
DATA INPUT REGISTER
SERIAL TO PARALLEL
I/O CONTROL
LDM(x8)
LUDM(x16)
BANK SELECT
x16/x32
ADDRESS REGISTER
REFRESH COUNTER
ROW BUFFER
ROW DECODER
4M x 16 /2M x 32
4M x 16 /2M x 32
4M x 16 /2M x 32
4M x 16 /2M x 32
SENSE AMP
x6/x32
2-bit PREFETCH
x8/x16
OUTPUT BUFFER
x8/x16
DQ0-15
2, 4, 5, 7,
8,10,11,13,
54,56,57,59,
60,62,63,65
A0-12
29,30,31,32,
35,36,37,38,
39,40,28,41,
42
CK,CK
BA0 26
BA1 27
LDQS 16
UDQS 51
VREF 49
COL. BUFFER
COLUMN DECODER
LATENCY & BURST LENGTH
PROGRAMMING REGISTER
DLL
STROBE GEN.
DATA STROBE
LCKE
LRAS
LCBR
LCAS
LWE
LWCBR
LDM(x8)
LUDM(x16)
VDD 1,18,33
VDDQ
3,9,15,55,61
TIMING REGISTER
DM INPUT
REGISTER
CK,CK
VSS 34,48,66
VSSQ
6,12,52,58,64
CK,CK
45, 46
44 CKE
24 CS
23 RAS
22 CAS
21 WE
LDM(x8)
LUDM(x16)
20,47

12. IC4251 (RH-IXC361WJZZQ)

This IC is a high performance CMOS super technology 16Mbit Flash Memory.

Start software (loader) for the CPU with a built-in digital processor and application software have been written on this Flash Memory.

The digital processor reads these soft wares on start-up and implements them.

Pin No.	Pin Name	I/O	Pin Function
25	A0	I	Address Inputs.
24	A1	I	
23	A2	I	
22	A3	I	
21	A4	I	
20	A5	I	
19	A6	I	
18	A7	I	
8	A8	I	
7	A9	I	
6	A10	I	
5	A11	I	
4	A12	I	
3	A13	I	
2	A14	I	
1	A15	I	
48	A16	I	
17	A17	I	
16	A18	I	
9	A19	I	
29	DQ0	I/O	Data inputs/Outputs.
31	DQ1	I/O	
33	DQ2	I/O	
35	DQ3	I/O	
38	DQ4	I/O	
40	DQ5	I/O	
42	DQ6	I/O	
44	DQ7	I/O	
30	DQ8	I/O	
32	DQ9	I/O	
34	DQ10	I/O	
36	DQ11	I/O	
39	DQ12	I/O	
41	DQ13	I/O	
43	DQ14	I/O	
45	DQ15A-1	I/O	Data inputs/Outputs or Address input.
26	E	I	Chip Enable.
28	G	I	Output Enable.
11	W	I	Write Enable.
12	RP	I	Reset/Block Temporary Unprotect.
15	RB	I	Ready/Busy Output.
47	BYTE	I	Byte/Word Organization Select
37	Vcc	---	Supply Voltage (3.0V)
27, 46	Vss	---	Ground.
10, 13, 14	NC	---	Not Connected Internally.

13. IC4410 (VHIAOZ1320C-1Y)

Load Switch with Controlled Slew Rate IC

Pin No.	Pin Name	I/O	Pin Function
1	OUT	O	Output. OUT is the source of the P-channel MOSFET.
2	GND	---	Ground.
3	EN	I	Enable. The P-channel MOSFET turns on when EN is logic HIGH.
4	NC	---	No Connect. This pin is not internally connected.
5	GND	---	Ground.
6	IN	I	Input. IN is the drain of the P-channel MOSFET. It is the supply input of the IC.

14. IC8103 (VHIT3Z18AFG-1Q)

Single Link LCD Receiver

The LVDS is essentially a signaling method used for high-speed transmission of binary data over copper.

It uses a lower voltage swing than other transmission standards. This low voltage differential is what delivers higher data transmission speeds and inherently greater bandwidth at lower power consumption.

This new technology not only addresses the needs of today's high performance data transmission application, but also the needs of future application.

This LVDS receiver IP supports Single Link transmission between Host and Flat Panel Display. The receiver recovers the LVDS data and converts into CMOS data. An on-chip PLL synchronizes the received clock with the parallel data and then all are transmitted to the parallel output port of the receiver.

Description:

- Supports Single Link (Single Input to Single Output) up to 135MHz dot clock for SXGA+ (input clock frequency: 25 to 135MHz)
- PLL requires no external components
- Clock strobe edge selectable
- Support 10-bit color
- Power down mode

Pin No.	Pin Name	I/O	Function Name	Pin No.	Pin Name	I/O	Function Name
1	PLLAVD	1.5V	E1AVDLIVC	141	SCLK	OUT	BT4VIC1
2	PLLAVS	GND	E1AVSLIVC	142	SDT	I/O	BD4THVIC1
3	VSSAGND45L	GND	Z7RSTAGND45L	143	vext1103	1.5V	SDRAMVDE1
4	VDDSAVCC4	3.3V	Z7RSTAVCC4	144	VDDC	1.5V	VDDC
5	VSSAGND45C	GND	Z7RSTAGND45C	145	RESET	IN	SMTCIF
6	VDDSAVCC5	3.3V	Z7RSTAVCC5	146	CMOS_IN	IN	IBUFDIF
7	BR0_M	OUT	Z7RSDST	147	OS_SEL	IN	TLCHTHDVIC1
8	BR0_P	OUT	Z7RSDST	148	OS_ON	IN	TLCHTHDVIC1
9	BR1_M	OUT	Z7RSDST	149	BANK_SEL	IN	TLCHTHDVIC1
10	BR1_P	OUT	Z7RSDST	150	TEMP[2]	IN	TLCHTHDVIC1
11	BR2_M	OUT	Z7RSDST	151	vgnd87	GND	SDRAMVSE
12	BR2_P	OUT	Z7RSDST	152	TEMP[1]	IN	TLCHTHDVIC1
13	BR3_M	OUT	Z7RSDST	153	TEMP[0]	IN	TLCHTHDVIC1
14	BR3_P	OUT	Z7RSDST	154	REV_MODE	IN	TLCHTHDVIC1
15	BCLK_M	OUT	Z7RSDST	155	HSCAN	IN	TLCHTHDVIC1
16	BCLK_P	OUT	Z7RSDST	156	VSCAN	IN	TLCHTHDVIC1
17	VDDSAVCC4	3.3V	Z7RSTAVCC4	157	vext1105	1.5V	SDRAMVDE1
18	VSSDGND1	GND	Z7RSTDGND1	158	VSS12	GND	VSS12
19	VDDCDVCC1	1.5V	Z7RSTDVCC1	159	SELLVDS	IN	TLCHTHUVIC1
20	VSSAGND45C	GND	Z7RSTAGND45C	160	SSCLK	I/O	BD8SCIF
21	VDDSAVCC5	3.3V	Z7RSTAVCC5	161	EXCLK	IN	IBUFIF
22	BG0_M	OUT	Z7RSDST	162	VDDC	1.5V	VDDC
23	BG0_P	OUT	Z7RSDST	163	VSSAGND1L	GND	Z7LVRAGND1L
24	BG1_M	OUT	Z7RSDST	164	RA_M	IN	Z7LVRXIO
25	BG1_P	OUT	Z7RSDST	165	RA_P	IN	Z7LVRXIO
26	BG2_M	OUT	Z7RSDST	166	RB_M	IN	Z7LVRXIO
27	BG2_P	OUT	Z7RSDST	167	RB_P	IN	Z7LVRXIO
28	BG3_M	OUT	Z7RSDST	168	RC_M	IN	Z7LVRXIO
29	BG3_P	OUT	Z7RSDST	169	RC_P	IN	Z7LVRXIO
30	VDDSAVCC4	3.3V	Z7RSTAVCC4	170	VDDAVDD1L	3.3V	Z7LVRAVDD1L
31	VSSDGND1	GND	Z7RSTDGND1	171	L_VDDPLL1	2.5V	Z7LVRVDDPLL1
32	VDDCDVCC1	1.5V	Z7RSTDVCC1	172	L_VSSPLL1	GND	Z7LVRVSSPLL1
33	VSSAGND45C	GND	Z7RSTAGND45C	173	L_VDDPLL2	2.5V	Z7LVRVDDPLL2
34	VDDSAVCC5	3.3V	Z7RSTAVCC5	174	L_VSSPLL2	GND	Z7LVRVSSPLL2
35	BB0_M	OUT	Z7RSDST	175	L_VDDD	1.5V	Z7LVRVDDD
36	BB0_P	OUT	Z7RSDST	176	L_VSSD	GND	Z7LVRVSSD
37	BB1_M	OUT	Z7RSDST	177	PVDDA1B	2.5V	Z7LVRVDDPLL1*1
38	BB1_P	OUT	Z7RSDST	178	PVDDA2B	2.5V	Z7LVRVDDPLL2*1
39	BB2_M	OUT	Z7RSDST	179	VDDS_L	3.3V	Z7LVRVDDS
40	BB2_P	OUT	Z7RSDST	180	PVSSA1B	GND	Z7LVRVSSPLL1*1
41	BB3_M	OUT	Z7RSDST	181	PVSSA2B	GND	Z7LVRVSSPLL2*1
42	BB3_P	OUT	Z7RSDST	182	VDDC_L	1.5V	Z7LVRVDDC
43	VDDCLCDVDDC	1.5V	Z7RSTVDDC	183	VDDAVDD2	2.5V	Z7LVRAVDD2
44	VSSLCDVSS2	GND	Z7RSTVSS2	184	VSSAGND2	GND	Z7LVRAGND2
45	VSSAGND45R	GND	Z7RSTAGND45R	185	VDDAVDD1R	3.3V	Z7LVRAVDD1R

Pin No.	Pin Name	I/O	Function Name	Pin No.	Pin Name	I/O	Function Name
46	vgnd0	GND	SDRAMVSE	186	RCLKM	IN	Z7LVRXIO
47	vext10	1.5V	SDRAMVDE1	187	RCLKP	IN	Z7LVRXIO
48	LS_B	OUT	B4IF	188	RD_M	IN	Z7LVRXIO
49	SPB1	OUT	BT8IF	189	RD_P	IN	Z7LVRXIO
50	SPB2	OUT	BT8IF	190	RE_M	IN	Z7LVRXIO
51	VDDS	3.3V	VDDS	191	RE_P	IN	Z7LVRXIO
52	VSS12	GND	VSS12	192	VSSAGND1R	GND	Z7LVRAGND1R
53	REV	OUT	B4IF	193	VDDC	1.5V	VDDC
54	vext12	1.5V	SDRAMVDE1	194	CLKOUT	OUT	Z7DDRVO
55	GOE	OUT	B4IF	195	VDDS	3.3V	VDDS
56	GCK	OUT	B4IF	196	VCSV1	OUT	B4IF
57	GSP1	OUT	BT4IF	197	VCSV2	OUT	B4IF
58	GSP2	OUT	BT4IF	198	VCSV3	OUT	B4IF
59	GSLOP	OUT	B4IF	199	VCSV4	OUT	Z7DDRVO
60	VPOL	I/O	BD4CIF	200	VCSV_Z	OUT	B4IF
61	VDDC	1.5V	VDDC	201	VSS12	GND	VSS12
62	VSS12	GND	VSS12	202	SPA2	OUT	BT8IF
63	ROM256	IN	IBUFDIF	203	SPA1	OUT	BT8IF
64	MASTER	IN	IBUFDIF	204	LS_A	OUT	B4IF
65	vext13	1.5V	SDRAMVDE1	205	VDDS	3.3V	VDDS
66	vgnd2	GND	SDRAMVSE	206	VSSAGND45L	GND	Z7RSTAGND45L
67	EX_DT[0]	I/O	BD4CIF	207	VDDCLCDVDDC	1.5V	Z7RSTVDDC
68	EX_DT[1]	I/O	BD4CIF	208	VSSLCDVSS2	GND	Z7RSTVSS2
69	vext21	2.5V	SDRAMVDE2	209	FR0_M	OUT	Z7RSDST
70	vgnd3	GND	SDRAMVSE	210	FR0_P	OUT	Z7RSDST
71	vext147	1.5V	SDRAMVDE1	211	FR1_M	OUT	Z7RSDST
72	vgnd37	GND	SDRAMVSE	212	FR1_P	OUT	Z7RSDST
73	vext22	2.5V	SDRAMVDE2	213	FR2_M	OUT	Z7RSDST
74	EX_DT[2]	I/O	BD4CIF	214	FR2_P	OUT	Z7RSDST
75	VDDS	3.3V	VDDS	215	FR3_M	OUT	Z7RSDST
76	VSS12	GND	VSS12	216	FR3_P	OUT	Z7RSDST
77	EX_DT[3]	I/O	BD4CIF	217	FCLK_M	OUT	Z7RSDST
78	EX_DT[4]	I/O	BD4CIF	218	FCLK_P	OUT	Z7RSDST
79	EX_DT[5]	I/O	BD4CIF	219	VDDSAVCC4	3.3V	Z7RSTAVCC4
80	EX_DT[6]	I/O	BD4CIF	220	VSSDGND1	GND	Z7RSTDGND1
81	EX_DT[7]	I/O	BD4CIF	221	VDDCDVCC1	1.5V	Z7RSTDVCC1
82	EX_DT[8]	I/O	BD4CIF	222	VSSAGND45C	GND	Z7RSTAGND45C
83	EX_DT[9]	I/O	BD4CIF	223	VDDSAVCC5	3.3V	Z7RSTAVCC5
84	EX_DT[10]	I/O	BD4CIF	224	FG0_M	OUT	Z7RSDST
85	EX_DT[11]	I/O	BD4CIF	225	FG0_P	OUT	Z7RSDST
86	EX_DT[12]	I/O	BD4CIF	226	FG1_M	OUT	Z7RSDST
87	EX_DT[13]	I/O	BD4CIF	227	FG1_P	OUT	Z7RSDST
88	EX_DT[14]	I/O	BD4CIF	228	FG2_M	OUT	Z7RSDST
89	VDDS	3.3V	VDDS	229	FG2_P	OUT	Z7RSDST
90	VSS12	GND	VSS12	230	FG3_M	OUT	Z7RSDST
91	EX_DT[15]	I/O	BD4CIF	231	FG3_P	OUT	Z7RSDST
92	EX_SPIO	I/O	BD4CIF	232	VDDSAVCC4	3.3V	Z7RSTAVCC4
93	VDDC	1.5V	VDDC	233	VSSDGND1	GND	Z7RSTDGND1
94	VSS12	GND	VSS12	234	VDDCDVCC1	1.5V	Z7RSTDVCC1
95	EX_CLKI	IN	IBUFIF	235	VSSAGND45C	GND	Z7RSTAGND45C
96	EX_CLKO	OUT	B8IF	236	VDDSAVCC5	3.3V	Z7RSTAVCC5
97	EX_DT[16]	I/O	BD4CIF	237	FB0_M	OUT	Z7RSDST
98	EX_DT[17]	I/O	BD4CIF	238	FB0_P	OUT	Z7RSDST
99	EX_DT[18]	I/O	BD4CIF	239	FB1_M	OUT	Z7RSDST
100	EX_DT[19]	I/O	BD4CIF	240	FB1_P	OUT	Z7RSDST
101	EX_DT[20]	I/O	BD4CIF	241	FB2_M	OUT	Z7RSDST
102	EX_DT[21]	I/O	BD4CIF	242	FB2_P	OUT	Z7RSDST
103	VSS12	GND	VSS12	243	FB3_M	OUT	Z7RSDST
104	VDDS	3.3V	VDDS	244	FB3_P	OUT	Z7RSDST
105	EX_DT[22]	I/O	BD4CIF	245	VDDCLCDVDDC	1.5V	Z7RSTVDDC
106	EX_DT[23]	I/O	BD4CIF	246	VSSLCDVSS2	GND	Z7RSTVSS2
107	EX_DT[24]	I/O	BD4CIF	247	VDDSAVCC4	3.3V	Z7RSTAVCC4
108	EX_DT[25]	I/O	BD4CIF	248	R_VDDPLL1	2.5V	Z7RSTDDRV25
109	EX_DT[26]	I/O	BD4CIF	249	R_VDDPLL2	2.5V	Z7RSTDDRV25

Pin No.	Pin Name	I/O	Function Name
110	EX_DT[27]	I/O	BD4CIF
111	EX_DT[28]	I/O	BD4CIF
112	VDDC	1.5V	VDDC
113	VSS12	GND	VSS12
114	EX_DT[29]	I/O	BD4CIF
115	vext158	1.5V	SDRAMVDE1
116	VDDS	3.3V	VDDS
117	VSS12	GND	VSS12
118	vgnd50	GND	SDRAMVSE
119	vext26	2.5V	SDRAMVDE2
120	vgnd84	GND	SDRAMVSE
121	EX_DT[30]	I/O	BD4CIF
122	EX_DIR	I/O	BD4CIF
123	TEST_C	IN	IBUFDIF
124	TEST_L[3]	IN	IBUFDIF
125	TEST_L[2]	IN	IBUFDIF
126	TEST_L[1]	IN	IBUFDIF
127	vgnd85	GND	SDRAMVSE
128	vext1102	1.5V	SDRAMVDE1
129	TEST_L[0]	IN	IBUFDIF
130	DAC_DATA	OUT	B4IF
131	DAC_CLK	OUT	B4IF
132	DAC_LATCH	OUT	B4IF
133	READY	OUT	B4IF
134	S_LBR	OUT	B4IF
135	G_LBR	OUT	B4IF
136	VDDS	3.3V	VDDS
137	VSS12	GND	VSS12
138	G_LBR_INV	OUT	B4IF
139	FS	OUT	B4IF
140	SREADY	I/O	BD4THVIC1

Pin No.	Pin Name	I/O	Function Name
250	R_VSSPLL1	GND	Z7RSTDDRVGND
251	R_VSSPLL2	GND	Z7RSTDDRVGND
252	R_VDD15	1.5V	Z7RSTDDRV15
253	R_VSS15	GND	Z7RSTDDRVGND
254	VSSAGND45C	GND	Z7RSTAGND45C
255	VDDSAVCC5	3.3V	Z7RSTAVCC5
256	VSSAGND45R	GND	Z7RSTAGND45R

*Pin No.177, 178 is a power supply for SSCG, Pin No.180, 181 is GND for SSCG, and it is separated with another power supply GND.

15. IC8201 (VHIBD8143MU-1Y)

High-accuracy gradation voltage generation IC with a built-in DAC

The high-accuracy gradation voltage generation IC with a built-in DAC, BD8143MUV, has a built-in 1chip integrating the setting value control by the serial signal, high-accuracy 10bit DAC and buffer amp.

Description:

- Reduced number of parts due to 1chip
- Built-in 10bit DAC
- DAC output buffer amp (12ch)
- Amplifier input/output switching function (CTL)
- 3-wire serial interface
- Temperature protection circuit
- Power ON reset circuit

Pin No.	Pin Name	I/O	Pin Function
1	LATCH	I	Series latch input.
2	SDIN	I	Series data input
3	CLK	I	Series clock input
4	SDOUT	O	Series data output
5	DVCC	---	Logic power supply
6	CT	---	Capacity connection terminal for power ON reset.
7	GND	---	Ground.
8	N.C	---	No Connect.
9	OSC	O	DAC tune clock I/O.
10	N.C	---	No Connect.
11	CTL	I	Amplifier input switch signal input.
12	N.C	---	No connection.
13	VCC	---	Buffer amplifier power supply.
14	OUT0	O	Gradation voltage output terminal 0.
15	OUT1	O	Gradation voltage output terminal 1.

Pin No.	Pin Name	I/O	Pin Function
16	OUT2	O	Gradation voltage output terminal 2.
17	OUT3	O	Gradation voltage output terminal 3.
18	OUT4	O	Gradation voltage output terminal 4.
19	OUT5	O	Gradation voltage output terminal 5.
20	AGND	---	Buffer amplifier ground.
21	AGND	---	Buffer amplifier ground.
22	OUT6	O	Gradation voltage output terminal 6.
23	OUT7	O	Gradation voltage output terminal 7.
24	OUT8	O	Gradation voltage output terminal 8.
25	OUT9	O	Gradation voltage output terminal 9.
26	OUT10	O	Gradation voltage output terminal 10.
27	OUT11	O	Gradation voltage output terminal 11.
28	VCC	---	Buffer amplifier power supply.
29	REFIN	O	DAC reference input.
30	VDAC	O	DAC voltage output.
31	DACGND	---	Ground for DAC.
32	N.C	---	No Connect.

16. IC8202 (VHIBU55041+-1Y)

Nonvolatile VCOM calibrator

- 128-gradation current output possible
- I2C interface adopted

Pin No.	Pin Name	I/O	Pin Function
1	IOUT	O	128 Step current output terminal.
2	AVDD	---	Power supply terminal 2.
3	WPB	I	Rewriting protection terminal. Enable at WPB=L Rewriting is "H" level (VDD).
4	VSS	---	Ground terminal.
5	VDD	---	Power supply terminal 1.
6	SDA	I/O	I2C data in-output terminal.
7	SCL	I	I2C clock terminal.
8	SET	---	Maximum current setting terminal.

17. IC8402 (VHIBD8162EK-1Q)

Multi-channel system power supply IC

- 6-channel output system power supply with a built-in POWER FET
- 4ch gradation buffer amp + Built-in common amp

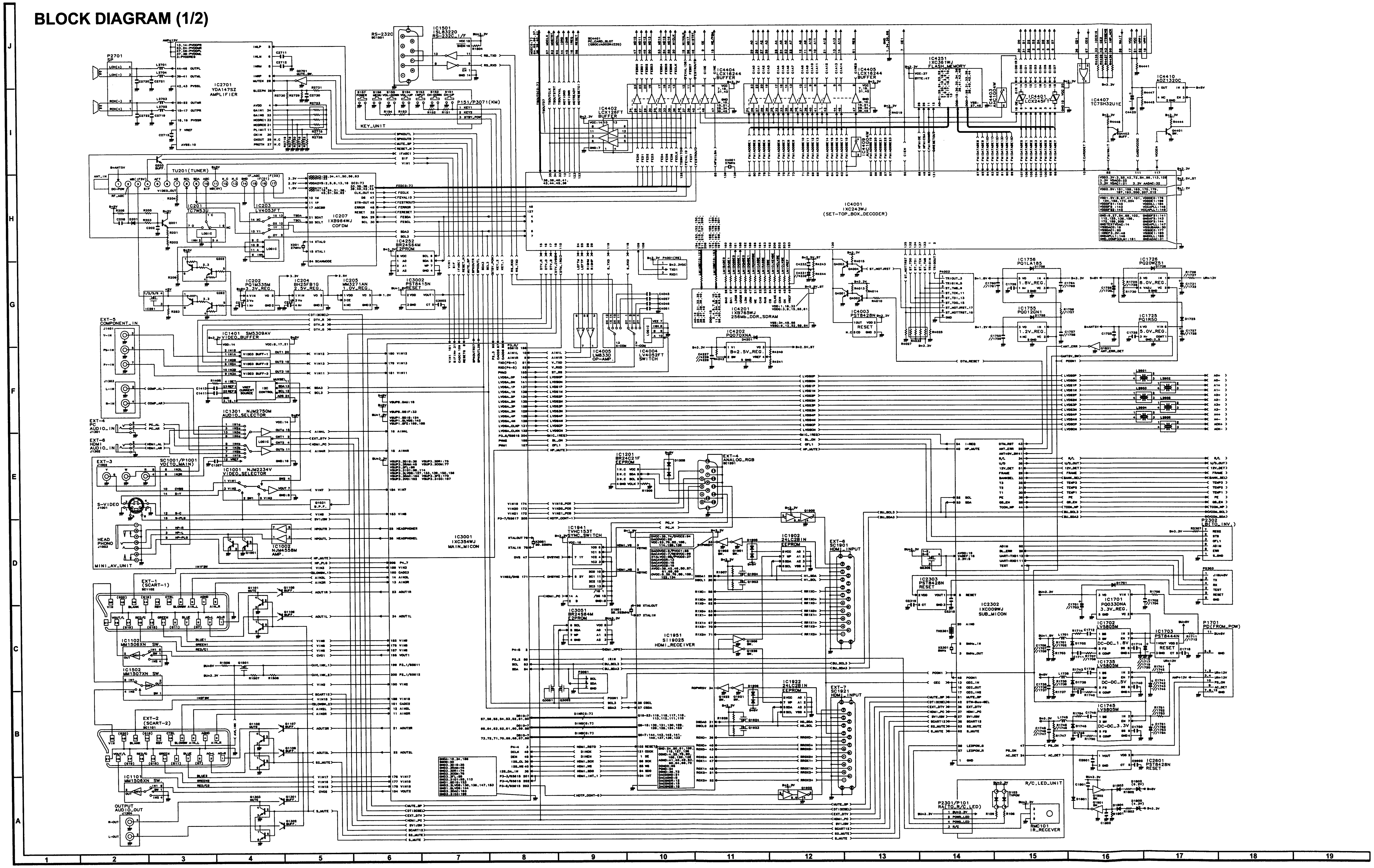
Pin No.	Pin Name	I/O	Pin Function
1	PGND3	---	Ground terminal.
2	PG3	O	Power good output 3.
3	DTC3	I	Duty control terminal 3.
4	COMP3	O	Error margin amplifier output 3.
5	FB3	I	Feedback input 3.
6	PVCC3	---	Power supply terminal.
7	LDFB3	I	LDO feedback input 3.
8	LDCTL3	I	LDO control terminal 3.
9	LDO3	O	LDO output 3.
10	IN1	I	AMP input 1.
11	IN2	I	AMP input 2.
12	IN3	I	AMP input 3.
13	IN4	I	AMP input 4.
14	IN+	I	COM input -.
15	IN-	I	COM input +.
16	VCOM	O	COM output.
17	OUT4	O	AMP output 4.
18	OUT3	O	AMP output 3.
19	OUT2	O	AMP output 2.
20	OUT1	O	AMP output 1.
21	HGND	---	Ground terminal.
22	CPFB2	I	Charge pump feedback 2.
23	CPCTL	I	CP control input.
24	C2	O	Charge pump output 2.

Pin No.	Pin Name	I/O	Pin Function
25	VCP2	O	Charge pump LOD output 2.
26	HVCC	---	Power supply terminal.
27	VCP1	O	Charge pump LOD output 1.
28	C1	O	Charge pump output 1.
29	CPPG	O	CP power good output.
30	CPFB1	I	Charge pump feedback 1.
31	PGND1	---	Ground terminal.
32	PG1	O	Power good output 1.
33	SW1	O	Switching output 1.
34	PGATE	O	P-channel gate drive output.
35	DTC1	I	Duty control terminal 1.
36	COMP1	O	Error margin amplifier output 1.
37	FB1	I	Feedback input 1.
38	CTL1	I	Control input 1.
39	FAULT	O	Protect detector output.
40	SCP	I	Short protection delay terminal
41	UVLO	I	Low voltage lockout setting terminal.
42	VCC	---	Power supply terminal.
43	VREF	O	Reference voltage output terminal.
44	FB2	I	Feedback input 2.
45	COMP2	O	Error margin amplifier output 2.
46	DTC2	I	Duty control terminal 2.
47	PVCC2	---	Power supply terminal.
48	BOOT2	I	Switch boot terminal 2.
49	SW2	O	Switching output 2.
50	CTL2	I	Control input 2.
51	PG2	O	Power good output 2.
52	REG	O	LDO output for BOOT.
53	LDFB1	I	LDO feedback 1.
54	LDCTL1	I	LDO control terminal 1.
55	LDPG1	O	LDO power good output 1.
56	LDO1	O	LDO output 1.
57	GND	---	Ground terminal.
58	RT	I	Frequency setting terminal.
59	LDFB2	I	LDO feedback 2.
60	LDO2	O	LDO output 2.
61	LDVCC2	---	Power supply terminal.
62	CTL3	I	Control input 3.
63	SW3	O	Switching output 3.
64	BOOT3	I	Switch boot terminal 3.

CHAPTER 6. BLOCK DIAGRAM/OVERALL WIRING

[1] BLOCK DIAGRAM

BLOCK DIAGRAM (1/2)


P2701 SP
IC2701 YDA147SZ AMPLIFIER
RS-232C
IC1501 ISL83220 RS-232C_I/F
KEY_UNIT
P151/P3071(KM)
TU201(TUNER)
IC201 TC7W53U
IC203 LV4053FT
IC207 IXB984WJ COFDM
IC4252 BR24S64M E2PROM
IC202 PQ1M335M 3.3V_REG.
IC204 BH25FB1G 2.5V_REG.
IC205 MM3271AN 1.0V_REG.
IC3002 PST8415N RESET
EXT-5 COMPONENT_IN
IC1401 SM5309AV VIDEO_BUFFER
EXT-4 PC AUDIO_IN
EXT-6 HDMI AUDIO_IN
IC1301 NJM2750M AUDIO_SELECTOR
EXT-3
SC1001/P1001 VD(TO_MAIN)
IC1001 NJM2234V VIDEO_SELECTOR
S-VIDEO
HEAD PHONO
IC1002 NJM4558M AMP.
MINI_AV_UNIT
EXT-1 (SCART-1)
IC1102 MM1506XN SW.
IC1502 MM1507XN SW.
EXT-2 (SCART-2)
IC1101 MM1506XN SW.
OUTPUT AUDIO_OUT
IC3001 IXC354WJ MAIN_MICON
IC4402 LCX126FT BUFFER
IC4404 LCX16244 BUFFER
IC4405 LCX16244 BUFFER
IC4231 IXC361WJ FLASH_MEMORY
IC4401 LCX245FT
IC4407 TC7SH32U1E
IC4410 AOZ1320C
IC4001 IXC243WJ (SET-TOP_BOX_DECODER)
IC4201 IXB783WJ 256Mb_DDR_SDRAM
IC4202 PQ070XNA B+2.5V_REG.
IC4003 PST8428N RESET
IC4005 LM833D OP-AMP.
IC4004 LV4052FT SWITCH
IC1756 PQ1LA185 1.8V_REG.
IC1726 PQ20WZ51 8.0V_REG.
IC1755 PQ012GN1 1.2V_REG.
IC1725 PQ1R50 5.0V_REG.
IC1201 BR24C21F EEPROM
EXT-4 ANALOG_RGB
IC1941 TVHC153T SYNC_SWITCH
IC3051 BR24S64M E2PROM
IC1951 SI19025 HDMI_RECEIVER
IC1902 24LC21N EEPROM
EXT-6 SC1901 HDMI_INPUT
IC1922 24LC21N EEPROM
EXT-7 SC1921 HDMI_INPUT
IC2303 PST8428N RESET
IC2302 IXC009WJ SUB_MICON
P2301/P101 RA(TO_R/C_LED)
R/C,LED_UNIT
RMC101 IR_RECEVER
P2302 LB(TO_INV.)
IC1701 PQ033ONA 3.3V_REG.
IC1702 VS805M DC-DC_1.8V
IC1703 PST8444N RESET
P1701 PD(FROM_POW)
IC1735 VS805M DC-DC_5V
IC1745 VS805M DC-DC_3.3V
IC2801 PST8428N RESET
J
I
H
G
F
E
D
C
B
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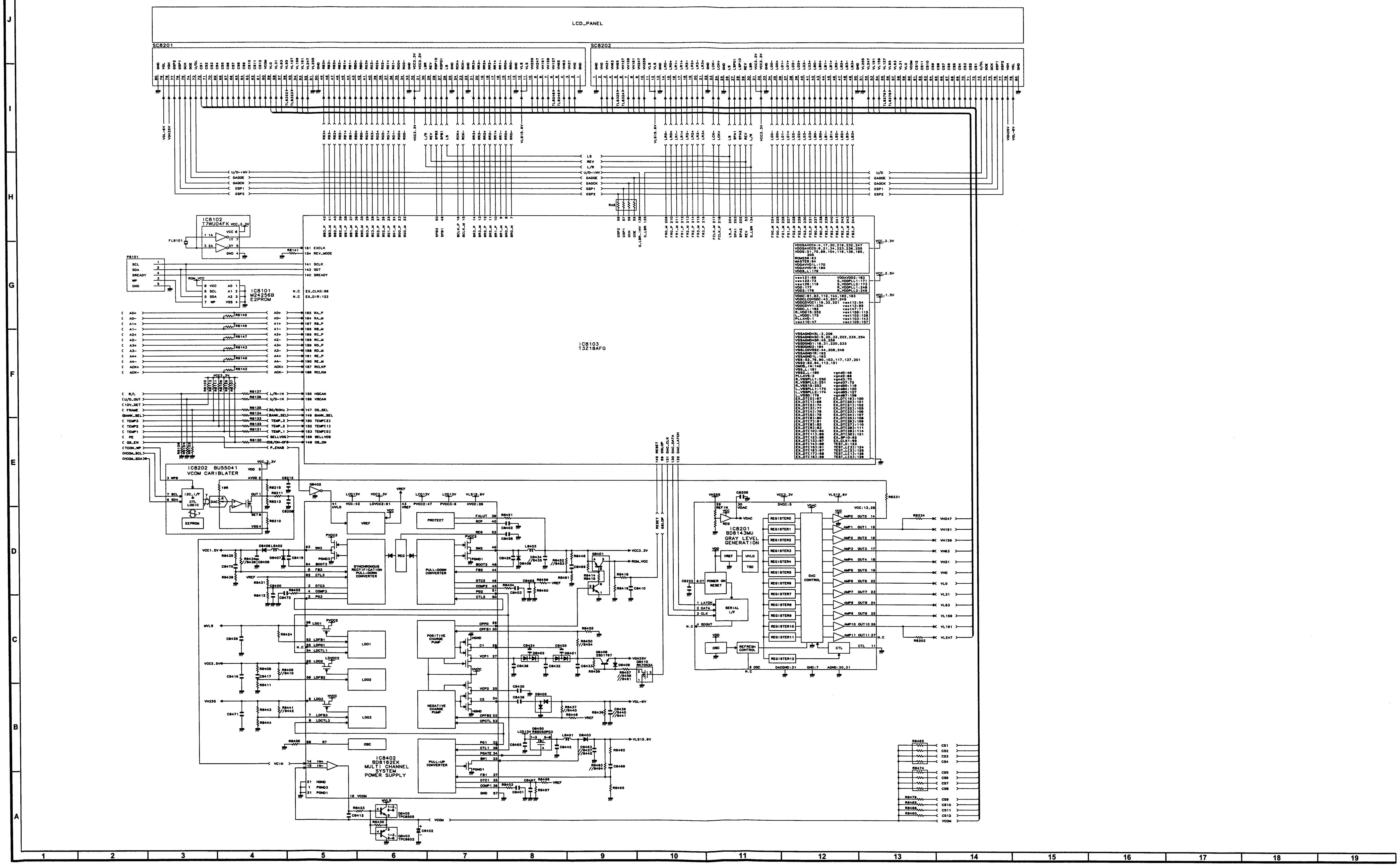
BLOCK DIAGRAM (2/2)


LCD_PANEL
SC8201
SC8202
IC8102
TC7WU04FK
IC8101
M24256B
E2PROM
PS101
IC8103
T3Z18AFG
IC8202 BU55041
VCOM CARIBLATER
E2PROM
IC8402
BD8162EK
MULTI CHANNEL
SYSTEM
POWER SUPPLY
SYNCHRONOUS RECTIFICATION PULL-DOWN CONVERTER
PULL-DOWN CONVERTER
PROTECT
VREF
LDO1
LDO2
LDO3
OSC
POSITIVE CHARGE PUMP
NEGATIVE CHARGE PUMP
PULL-UP CONVERTER
IC8201
BD8143MU
GRAY LEVEL
GENERATION
DAC CONTROL
SERIAL I/F
POWER ON RESET
REFRESH CONTROL
VCOM
VCC3.3V
VLS15.6V
VGH35V
VGL-6V
J
I
H
G
F
E
D
C
B
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1
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3
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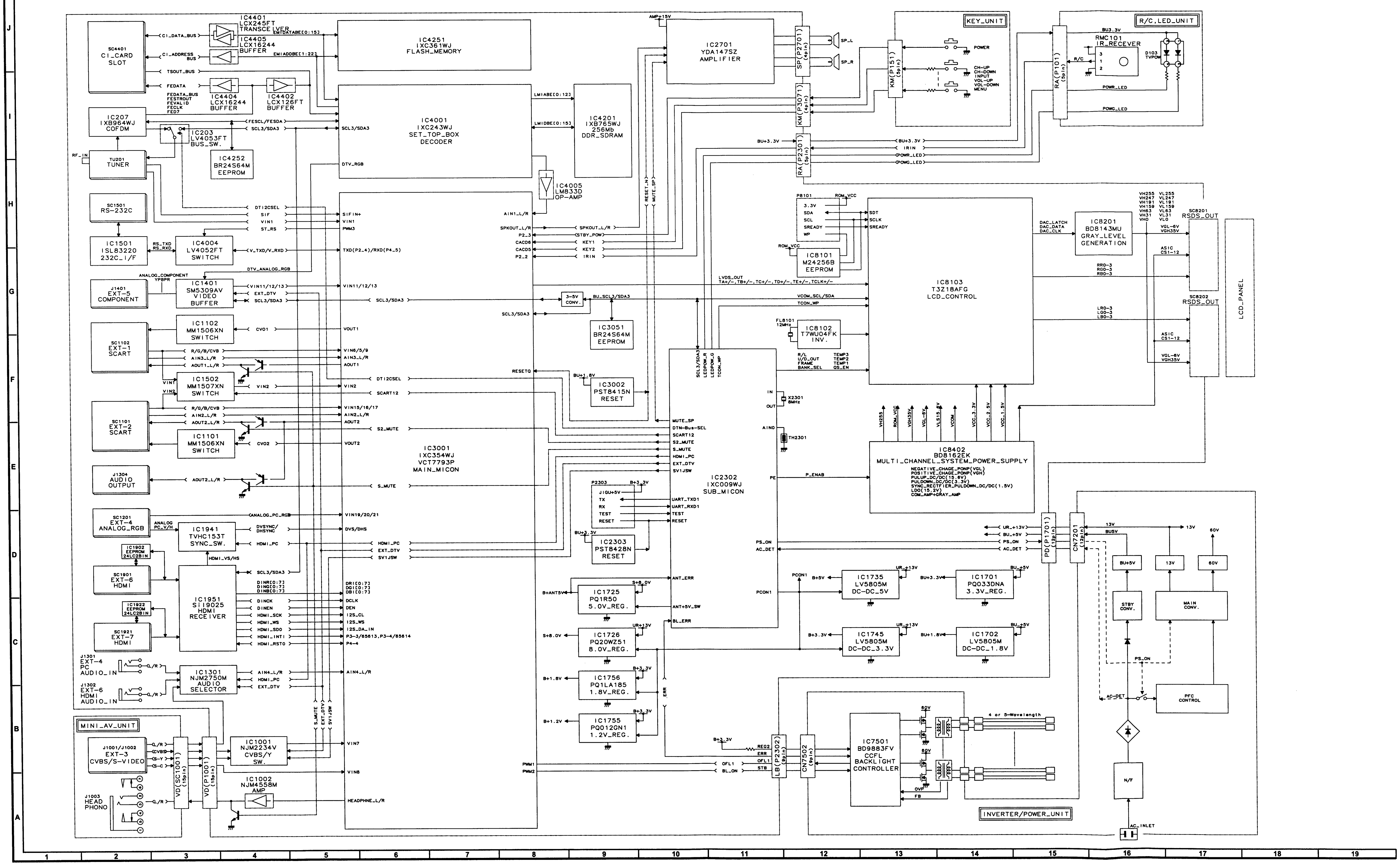
[2] SYSTEM BLOCK DIAGRAM

SYSTEM BLOCK DIAGRAM


SC4401 CI_CARD SLOT
IC4401 LCX245FT TRANSCEIVER
IC4405 LCX16244 BUFFER
IC4404 LCX16244 BUFFER
IC4402 LCX126FT BUFFER
IC4251 IXC361WJ FLASH_MEMORY
IC4001 IXC243WJ SET_TOP_BOX DECODER
IC4201 IXB765WJ 256Mb DDR_SDRAM
IC207 IXB964WJ COFDM
IC203 LV4053FT BUS_SW.
IC4252 BR24S64M EEPROM
TU201 TUNER
RF_IN
IC4005 LM833D OP-AMP
SC1501 RS-232C
IC1501 ISL83220 232C_I/F
IC4004 LV4052FT SWITCH
J1401 EXT-5 COMPONENT
IC1401 SM5309AV VIDEO BUFFER
SC1102 EXT-1 SCART
IC1102 MM1506XN SWITCH
IC1502 MM1507XN SWITCH
SC1101 EXT-2 SCART
IC1101 MM1506XN SWITCH
J1304 AUDIO OUTPUT
SC1201 EXT-4 ANALOG_RGB
IC1941 TVHC153T SYNC_SW.
IC1902 EEPROM 24LC28IN
SC1901 EXT-6 HDMI
IC1922 EEPROM 24LC28IN
SC1921 EXT-7 HDMI
IC1951 SI19025 HDMI RECEIVER
J1301 EXT-4 PC AUDIO_IN
J1302 EXT-6 HDMI AUDIO_IN
IC1301 NJM2750M AUDIO SELECTOR
MINI_AV_UNIT
J1001/J1002 EXT-3 CVBS/S-VIDEO
J1003 HEAD PHONO
VD(SC1001) (15pin)
VD(P1001) (15pin)
IC1001 NJM2234V CVBS/Y SW.
IC1002 NJM4558M AMP
IC3001 IXC354WJ VCT7793P MAIN_MICON
3-5V CONV.
IC3051 BR24S64M EEPROM
IC3002 PST8415N RESET
IC2303 PST8428N RESET
IC2302 IXC009WJ SUB_MICON
IC1725 PQ1R50 5.0V_REG.
IC1726 PQ20WZ51 8.0V_REG.
IC1756 PQ1LA185 1.8V_REG.
IC1755 PQ012GN1 1.2V_REG.
IC2701 YDA147SZ AMPLIFIER
SP(P2701) (4pin)
SP_L
SP_R
KM(P3071) (5pin)
RA(P2301) (5pin)
KEY_UNIT
KM(P151) (5pin)
POWER
CH-UP
CH-DOWN
INPUT
VOL-UP
VOL-DOWN
MENU
R/C,LED_UNIT
RA(P101) (5pin)
RMC101 IR_RECEVER
D103 TVPOW
POWR_LED
POWG_LED
P8101
IC8101 M24256B EEPROM
IC8103 T3Z18AFG LCD_CONTROL
IC8102 T7WU04FK INV.
IC8201 BD8143MU GRAY_LEVEL GENERATION
SC8201 RSDS_OUT
SC8202 RSDS_OUT
LCD_PANEL
IC8402 BD8162EK MULTI_CHANNEL_SYSTEM_POWER_SUPPLY
NEGATIVE_CHAGE_PONP(VGL)
POSITIVE_CHAGE_PONP(VGH)
PULUP_DC/DC(15.6V)
PULDOWN_DC/DC(3.3V)
SYNC_RECTFIER_PULDOWN_DC/DC(1.5V)
LDO(15.2V)
COM_AMP+GRAY_AMP
X2301 8MHz
TH2301
PD(P1701) (12pin)
CN7201 (12pin)
IC1735 LV5805M DC-DC_5V
IC1701 PQ033DNA 3.3V_REG.
IC1745 LV5805M DC-DC_3.3V
IC1702 LV5805M DC-DC_1.8V
BU+5V
13V
60V
STBY CONV.
MAIN CONV.
PS_ON
AC_DET
PFC CONTROL
N/F
AC_INLET
LB(P2302) (9pin)
CN7502 (9pin)
IC7501 BD9883FV CCFL BACKLIGHT CONTROLLER
4 or 5-Wavelength
OVP
FB
INVERTER/POWER_UNIT
J
I
H
G
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E
D
C
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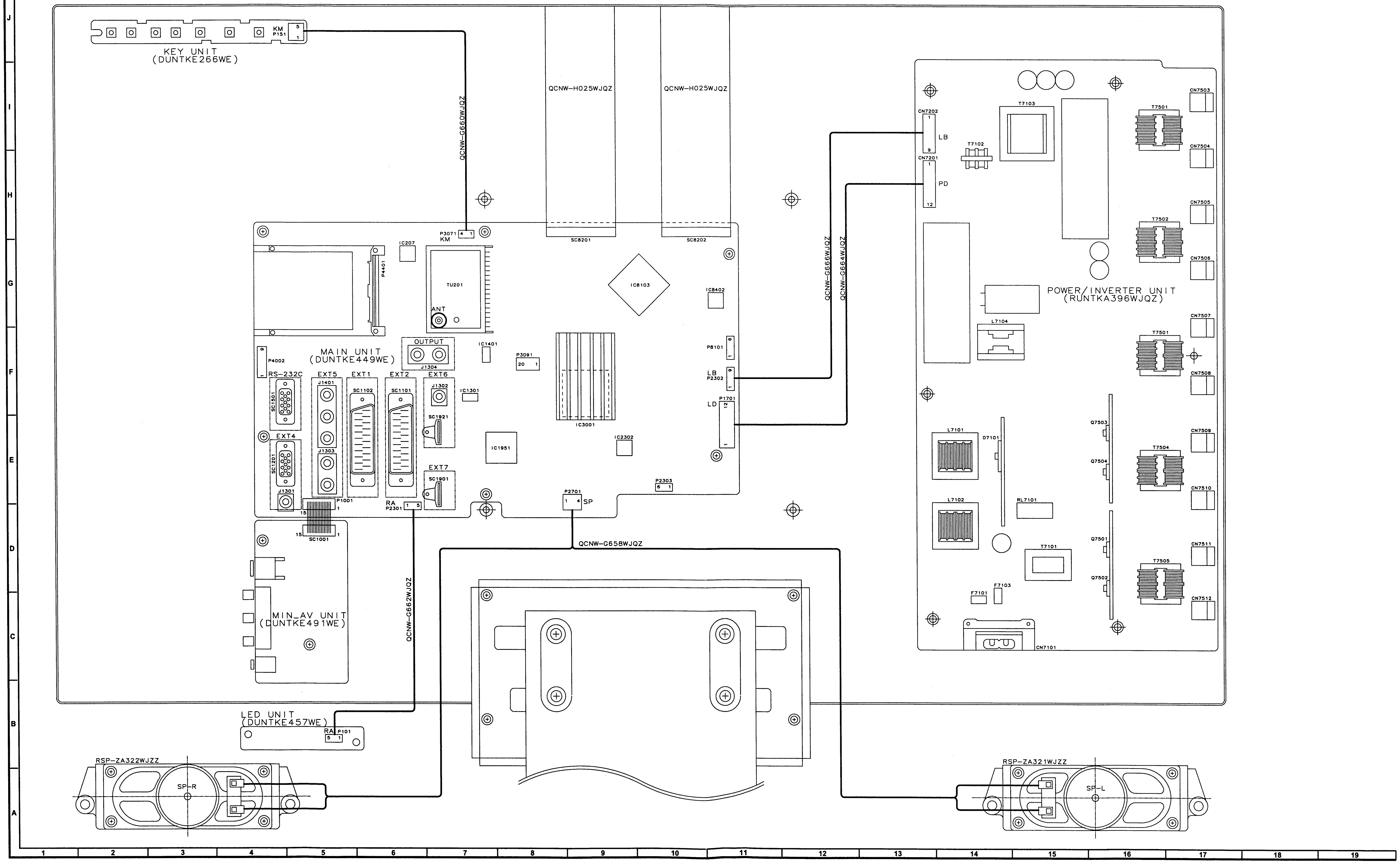
[3] OVERALL WIRING DIAGRAM

OVERALL WIRING DIAGRAM


KM
P151
5
1
KEY UNIT
(DUNTKE266WE)
QCNW-G660WJQZ
QCNW-H025WJQZ
QCNW-H025WJQZ
SC8201
SC8202
P3071
4
1
KM
IC207
P4401
TU201
ANT
IC8103
IC8402
OUTPUT
J1304
IC1401
P3091
20
1
P8101
6
1
LB
P2302
9
1
P1701
LD
12
1
MAIN UNIT
(DUNTKE449WE)
P4002
RS-232C
SC1501
EXT5
J1401
EXT1
SC1102
EXT2
SC1101
EXT6
J1302
SC1921
IC1301
IC3001
IC1951
IC2302
EXT4
SC1201
J1303
EXT7
SC1901
P2303
6
1
J1301
P1001
15
1
RA
P2301
1
5
P2701
1
4
SP
SC1001
QCNW-G658WJQZ
QCNW-G666WJQZ
QCNW-G664WJQZ
MIN_AV UNIT
(DUNTKE491WE)
QCNW-G662WJQZ
LED UNIT
(DUNTKE457WE)
RA
P101
5
1
RSP-ZA322WJZZ
SP-R
RSP-ZA321WJZZ
SP-L
CN7202
1
LB
9
CN7201
1
PD
12
T7102
T7103
T7501
CN7503
CN7504
CN7505
T7502
CN7506
POWER/INVERTER UNIT
(RUNTKA396WJQZ)
L7104
CN7507
T7501
CN7508
L7101
D7101
Q7503
Q7504
CN7509
T7504
CN7510
L7102
RL7101
T7101
Q7501
Q7502
CN7511
T7505
CN7512
F7101
F7103
CN7101
J
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H
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F
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C
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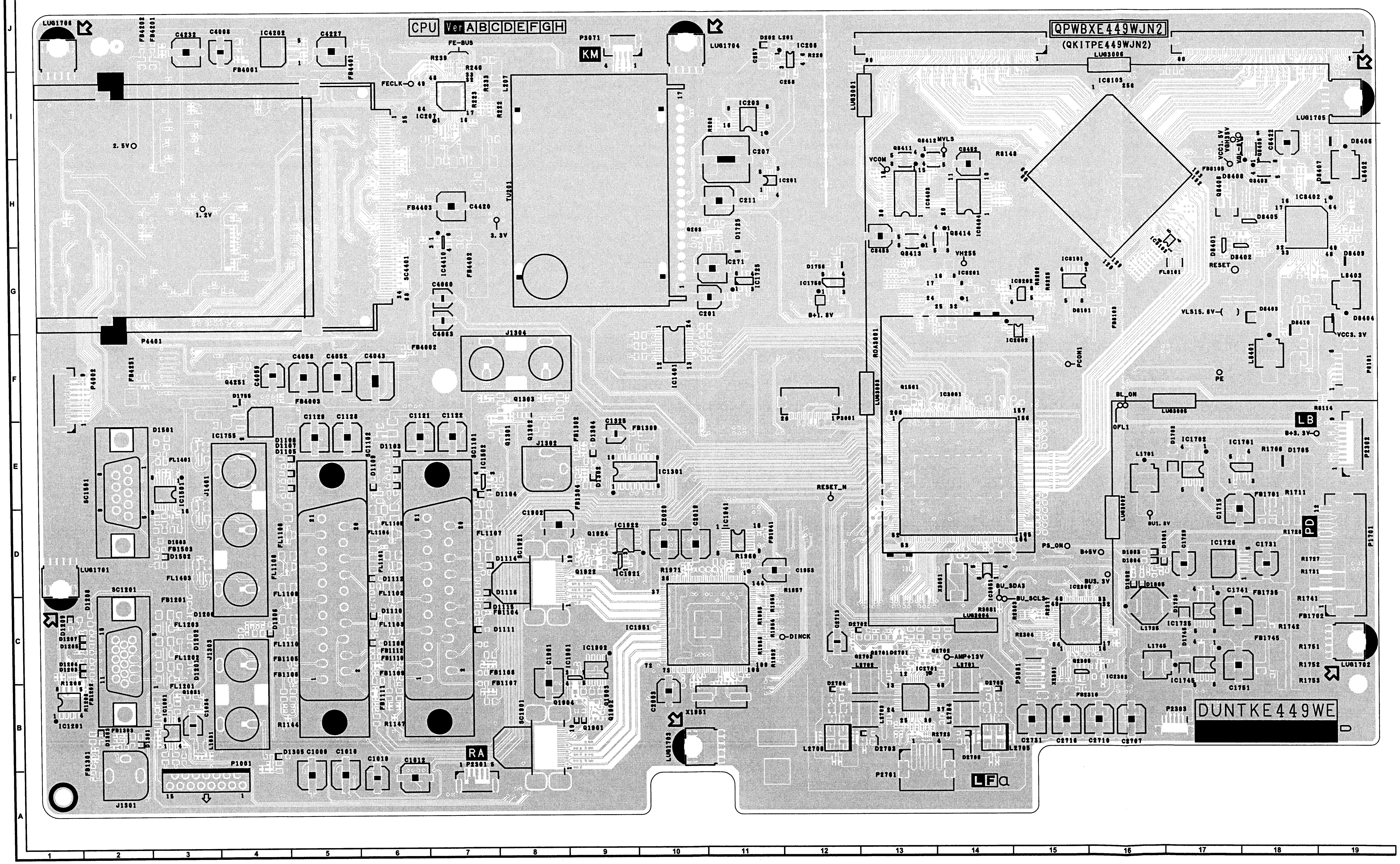
CHAPTER 7. PRINTED WIRING BOARD ASSEMBLIES

[1] MAIN Unit

MAIN Unit (Side A)


CPU Ver A B C D E F G H
QPWBXE449WJN2
(QKITPE449WJN2)
DUNTKE449WE
KM
LB
PD
RA
LF
J
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H
G
F
E
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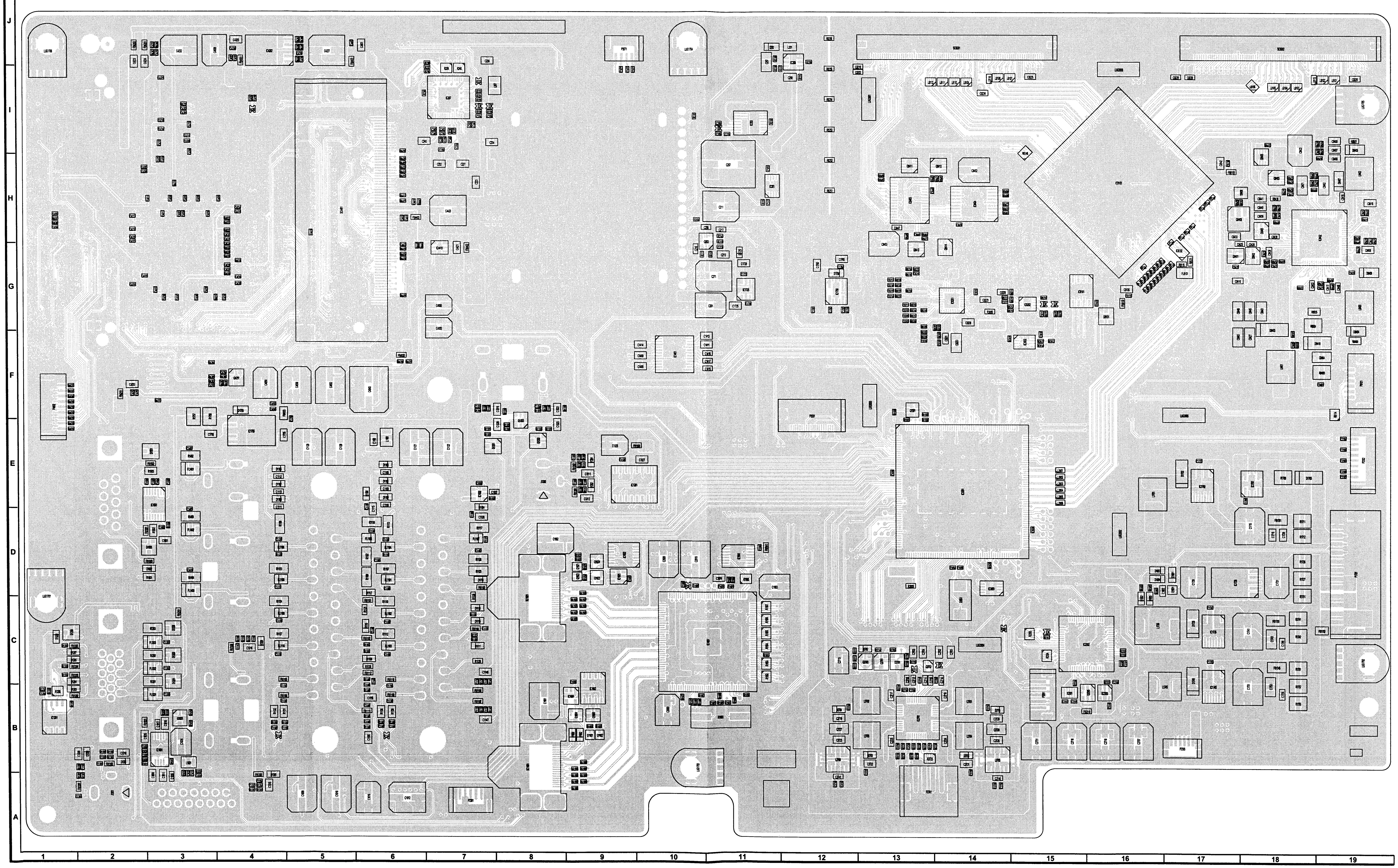
MAIN Unit (Chip Side A)


J
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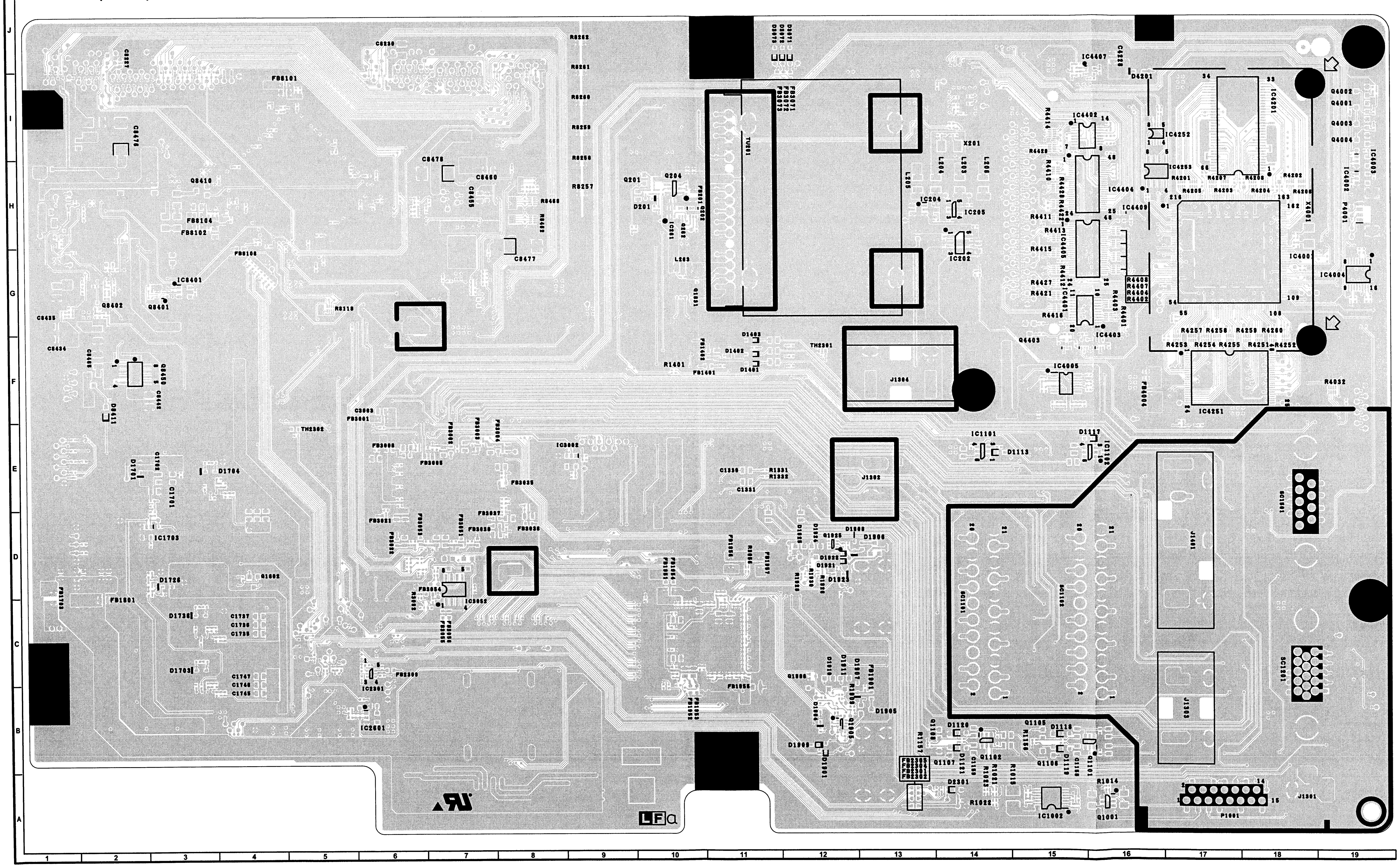
MAIN Unit (Side B)


J
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F
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D
C
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11
12
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14
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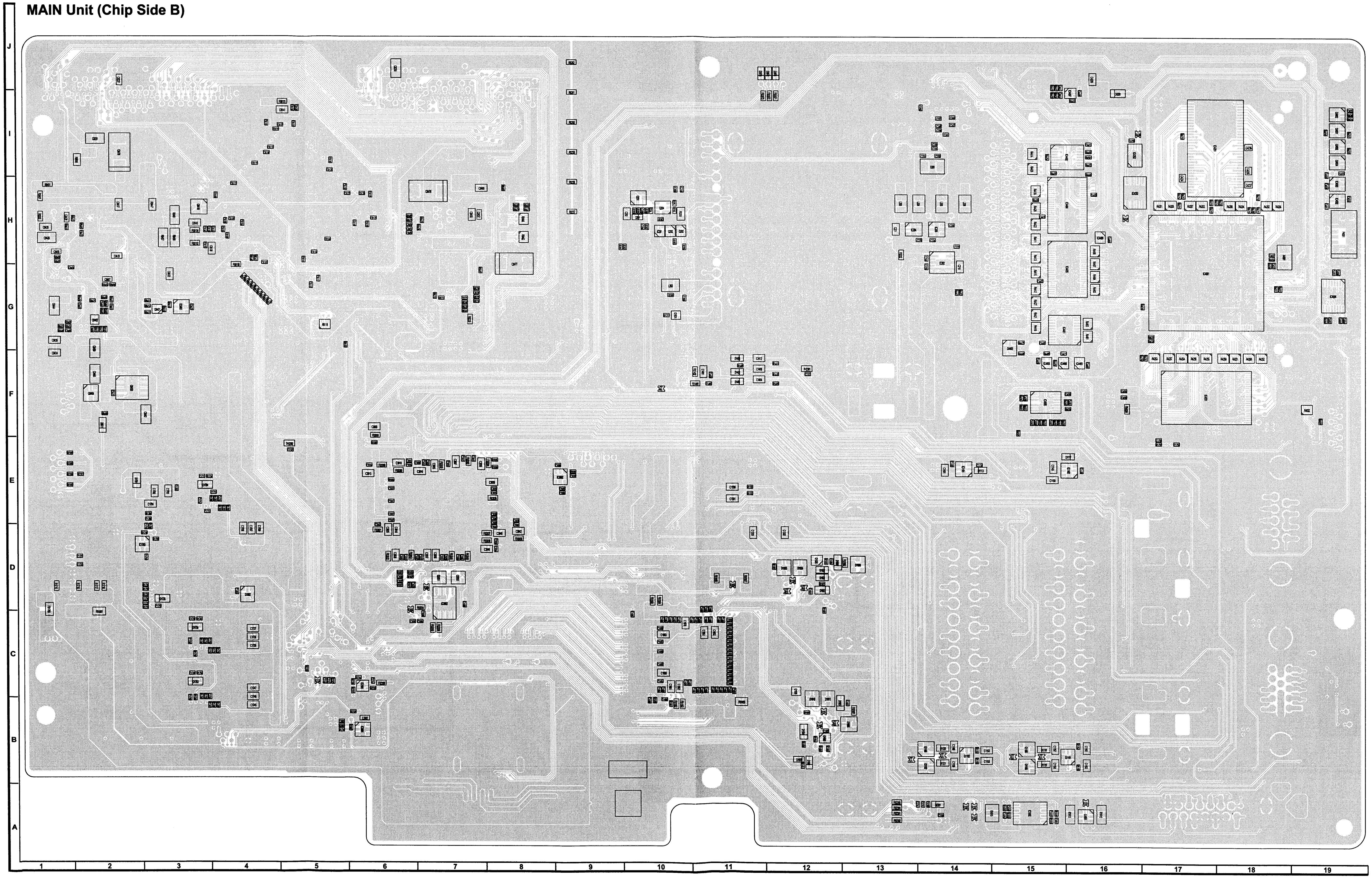
19
IC4001
IC4251
J1304
J1302
J1301
P1001
IC1101
IC1002
Q1001
X201
L205
TU801

MAIN Unit (Chip Side B)


J
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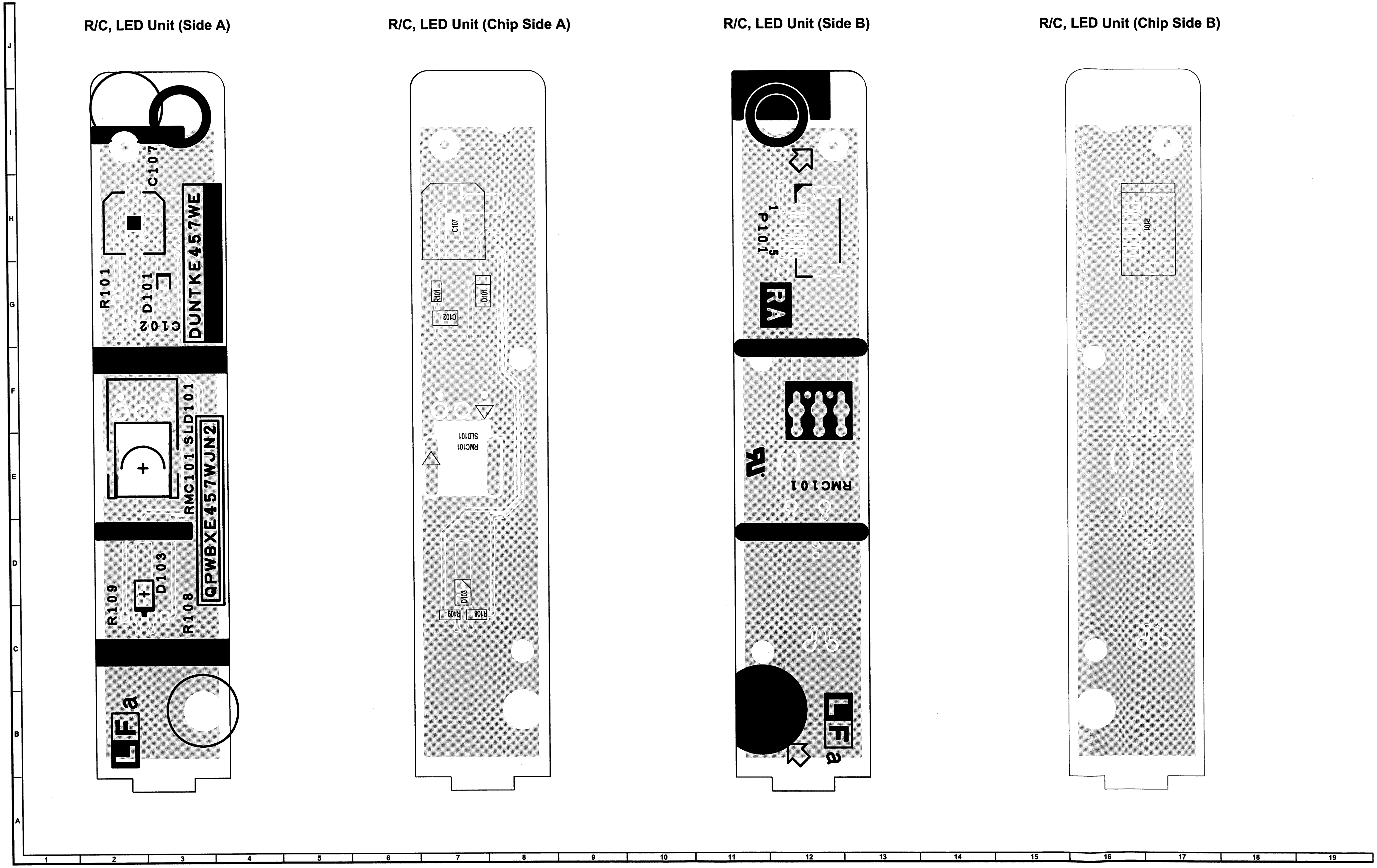
[2] R/C, LED Unit



R/C, LED Unit (Side A)

R/C, LED Unit (Chip Side A)

R/C, LED Unit (Side B)

R/C, LED Unit (Chip Side B)

J
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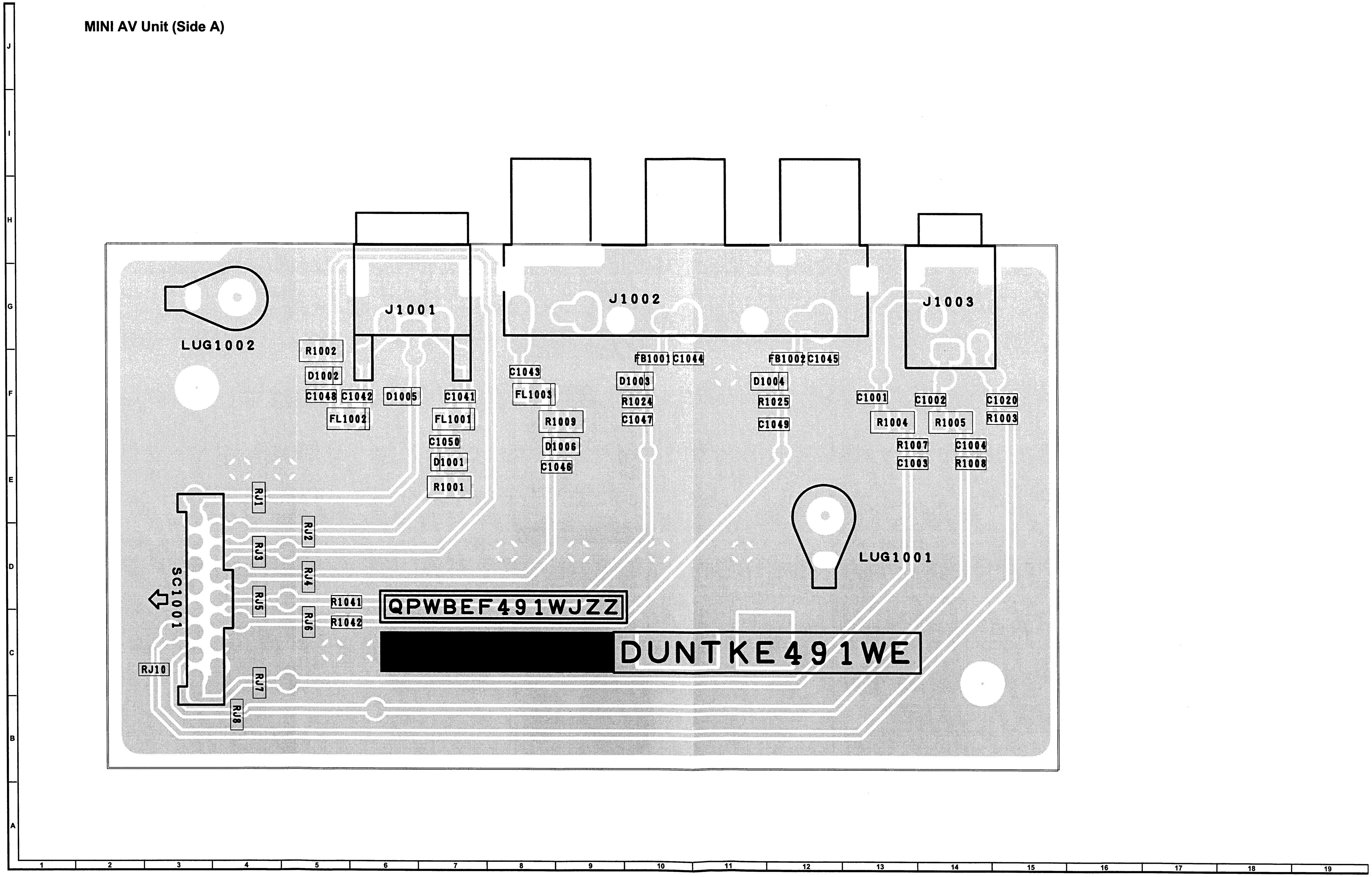
14
15
16
17
18
19
C107
DUNTKE457WE
R101
D101
C102
RMC101 SLD101
QPWBXE457WJN2
D103
R109
R108
LF a
C107
R101
D101
C102
SLD101
RMC101
D103
R109
R108
1
P101
5
RA
RMC101
LF a
P101

[3] MINI AV Unit

MINI AV Unit (Side A)


J
I
H
G
F
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D
C
B
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3
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6
7
8
9
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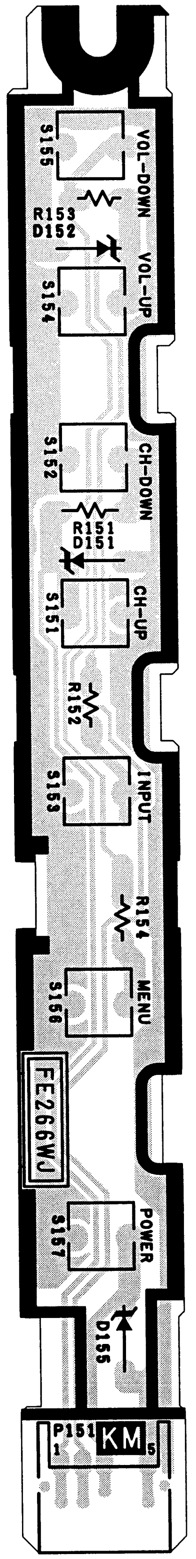
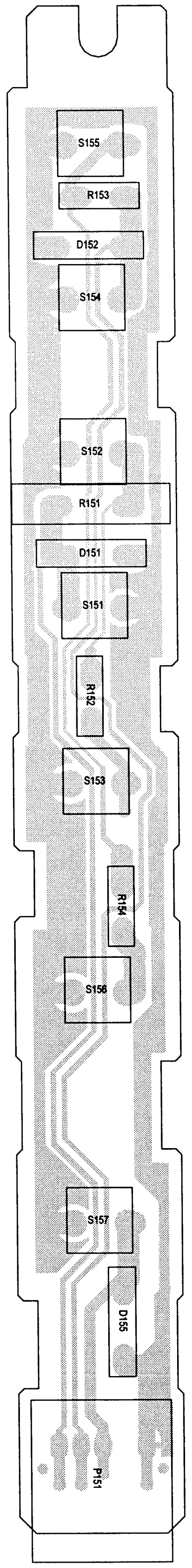
11
12
13
14
15
16
17
18
19
J1001
J1002
J1003
LUG1002
LUG1001
R1002
D1002
C1048
C1042
D1005
C1041
FL1002
FL1001
C1050
D1001
R1001
C1043
FL1003
R1009
D1006
C1046
FB1001
C1044
D1003
R1024
C1047
FB1002
C1045
D1004
R1025
C1049
C1001
C1002
C1020
R1004
R1005
R1003
R1007
C1003
C1004
R1008
RJ1
RJ2
RJ3
RJ4
RJ5
RJ6
RJ7
RJ8
RJ10
SC1001
R1041
R1042
QPWBEF491WJZZ
DUNTKE491WE

[4] KEY

KEY Unit (Side A)


S155
VOL-DOWN
R153
D152
S154
VOL-UP
S152
CH-DOWN
R151
D151
S151
CH-UP
R152
S153
INPUT
R154
S156
MENU
FE266WJ
S157
POWER
D155
P151
1
KM
5

KEY Unit (Chip Parts Side A)


S155
R153
D152
S154
S152
R151
D151
S151
R152
S153
R154
S156
S157
D155
P151

CHAPTER 8. SCHEMATIC DIAGRAM

[1] DESCRIPTION OF SCHEMATIC DIAGRAM

1. VOLTAGE MEASUREMENT CONDITION:

1) The voltages at test points are measured on exclusive AC adaptor and the stable supply voltage of AC 120V. Signals are fed by a color bar signal generator for servicing purpose and the above voltages are measured with a 20k ohm/V tester.

2. INDICATION OF RESISTOR & CAPACITOR:

RESISTOR

1) The unit of resistance "Ω" is omitted.
   (K=kΩ=1000Ω, M=MΩ).
2) All resistors are ± 5%, unless otherwise noted.
   (K= ± 10%, F= ± 1%, D= ± 0.5%)
3) All resistors are 1/16W, unless otherwise noted.

CAPACITOR

1) All capacitors are µF, unless otherwise noted.
   (P=pF=µµF).
2) All capacitors are 50V, unless otherwise noted.

CAUTION:
This circuit diagram is original one, therefore there may be a slight difference from yours.

SAFETY NOTES:
1) DISCONNECT THE AC PLUG FROM THE AC OUTLET BEFORE REPLACING PARTS.
2) SEMICONDUCTOR HEAT SINKS SHOULD BE REGARDED AS POTENTIAL SHOCK HAZARDS WHEN THE CHASSIS IS OPERATING.

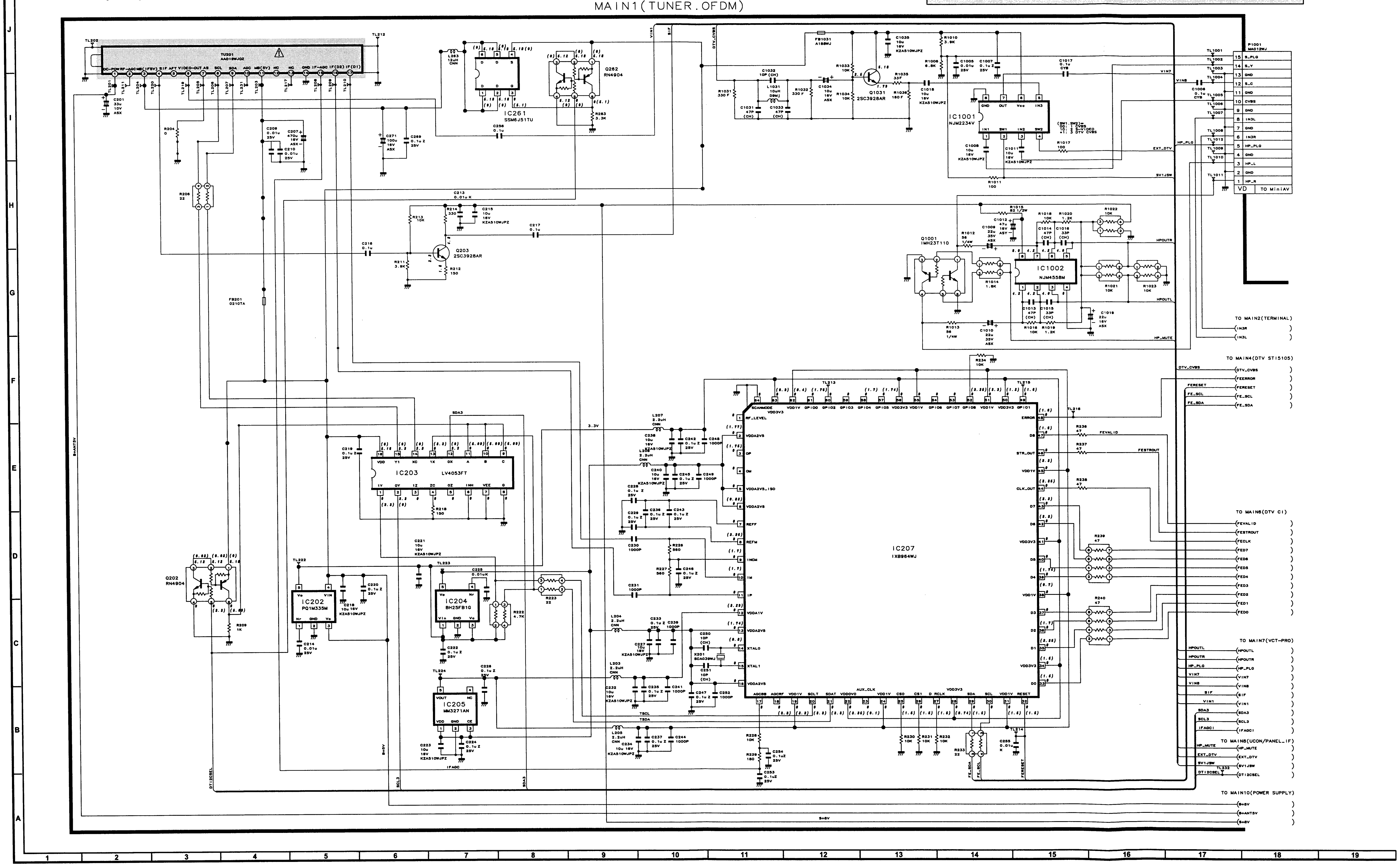
IMPORTANT SAFETY NOTICE:
PARTS MARKED WITH "⚠" ( ) ARE IMPORTANT FOR MAINTAINING THE SAFETY OF THE SET. BE SURE TO REPLACE THESE PARTS WITH SPECIFIED ONES FOR MAINTAINING THE SAFETY AND PERFORMANCE OF THE SET.

AVIS DE SECURITE IMPORTANT:
LES PIECES MARQUEES "⚠" ( ) SONT IMPORTANTES POUR MAINTENIR LA SECURITE DE L'APPAREIL.
NE REMPLACER CES PIEDES QUE PAR DES PIECES DONT LE NUMERO EST SPECIFIE POUR MAINTENIR LA SECURITE ET PROTEGER LE BON FONCTIONNEMENT DE L'APPAREIL.

[2] SCHEMATIC DIAGRAM

MAIN Unit (1/13)

⚠ AND SHADED COMPONENTS=SAFETY RELATED PARTS


MAIN1(TUNER.OFDM)
TU201
AA01BWJGZ
IC261
SSM6J51TU
Q252
RN4904
Q1031
2SC3928AR
IC1001
NJM2234V
P1001
TO MiniAV
Q1001
IMH23T110
IC1002
NJM4558M
Q203
2SC3928AR
IC203
LV4053FT
IC202
PQ1M335M
IC204
BH25FB1G
IC205
MM3271AN
Q202
RN4904
IC207
IXB964WJ
TO MAIN2(TERMINAL)
TO MAIN4(DTV STI5105)
TO MAIN6(DTV CI)
TO MAIN7(VCT-PRO)
TO MAIN8(UCON/PANEL_IF)
TO MAIN10(POWER SUPPLY)
J
I
H
G
F
E
D
C
B
A
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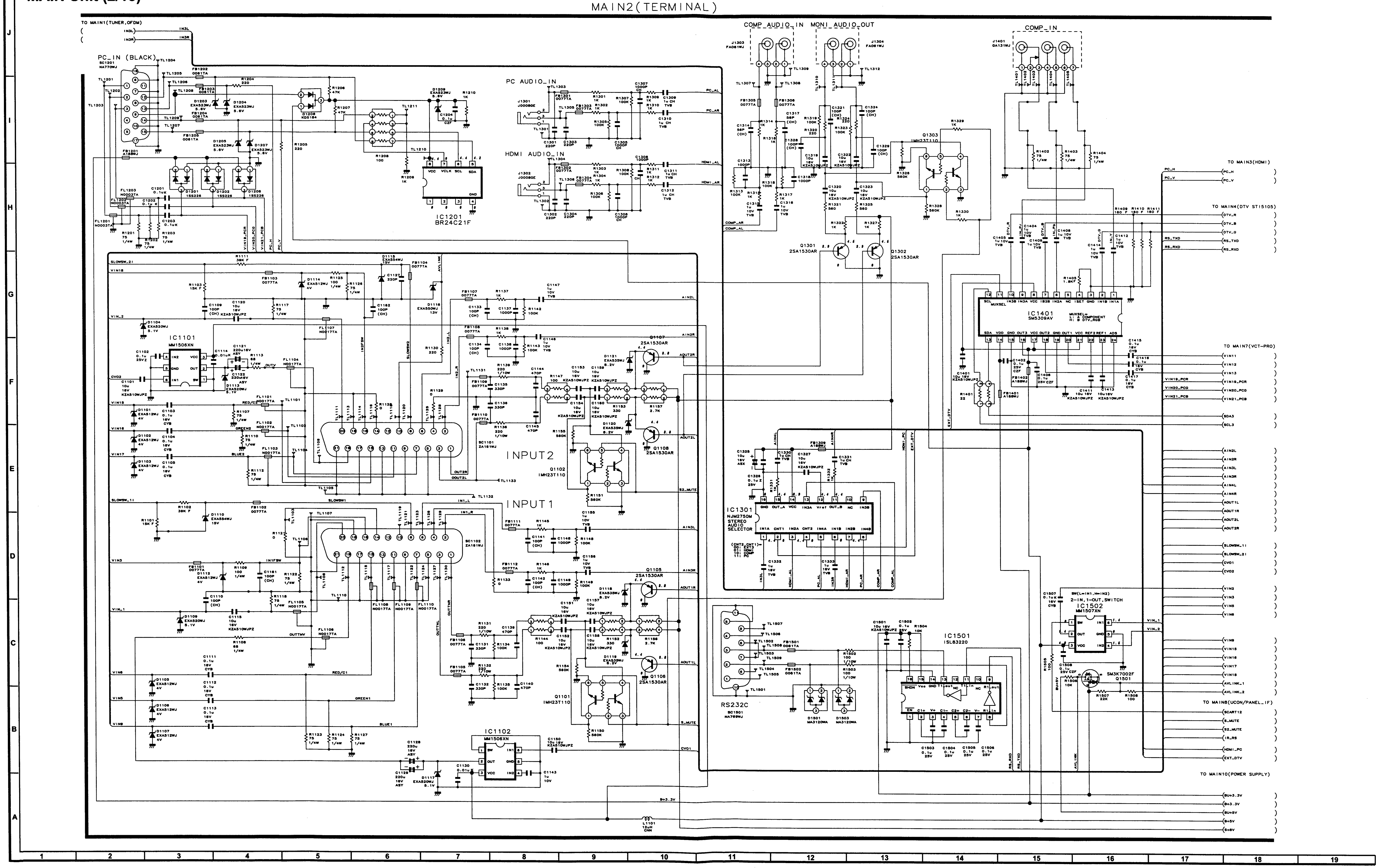
MAIN Unit (2/13)


MAIN2(TERMINAL)
TO MAIN1(TUNER,OFDM)
PC_IN (BLACK)
SC1201
IC1201
BR24C21F
PC AUDIO_IN
J1301
HDMI AUDIO_IN
J1302
COMP_AUDIO_IN
MONI_AUDIO_OUT
J1303
J1304
COMP_IN
J1401
Q1303
Q1301
2SA1530AR
Q1302
2SA1530AR
IC1101
MM1506XN
INPUT2
SC1101
Q1107
2SA1530AR
Q1108
2SA1530AR
Q1102
IMH23T110
INPUT1
SC1102
Q1105
2SA1530AR
Q1106
2SA1530AR
Q1101
IMH23T110
IC1102
MM1506XN
IC1401
SM5309AV
IC1301
NJM2750M
STEREO AUDIO SELECTOR
RS232C
SC1501
IC1501
ISL83220
IC1502
MM1507XN
SW(L=IN1,H=IN2)
2-IN,1-OUT,SWITCH
Q1501
SM3K7002F
L1101
TO MAIN3(HDMI)
TO MAIN4(DTV ST15105)
TO MAIN7(VCT-PRO)
TO MAIN8(UCON/PANEL_IF)
TO MAIN10(POWER SUPPLY)
PC_H
PC_V
DTV_R
DTV_B
DTV_G
RS_TXD
RS_RXD
VIN11
VIN12
VIN13
VIN19_PCR
VIN20_PCG
VIN21_PCB
SDA3
SCL3
AIN2L
AIN2R
AIN3L
AIN3R
AIN4L
AIN4R
AOUT1L
AOUT1R
AOUT2L
AOUT2R
SLOWSW_11
SLOWSW_21
CVO1
CVO2
VIN2
VIN3
VIN5
VIN6
VIN9
VIN15
VIN16
VIN17
VIN18
AVLINK_1
AVLINK_2
SCART12
S_MUTE
S2_MUTE
IR_RS
HDMI_PC
EXT_DTV
BU+3.3V
B+3.3V
BU+5V
B+5V
B+8V
J
I
H
G
F
E
D
C
B
A
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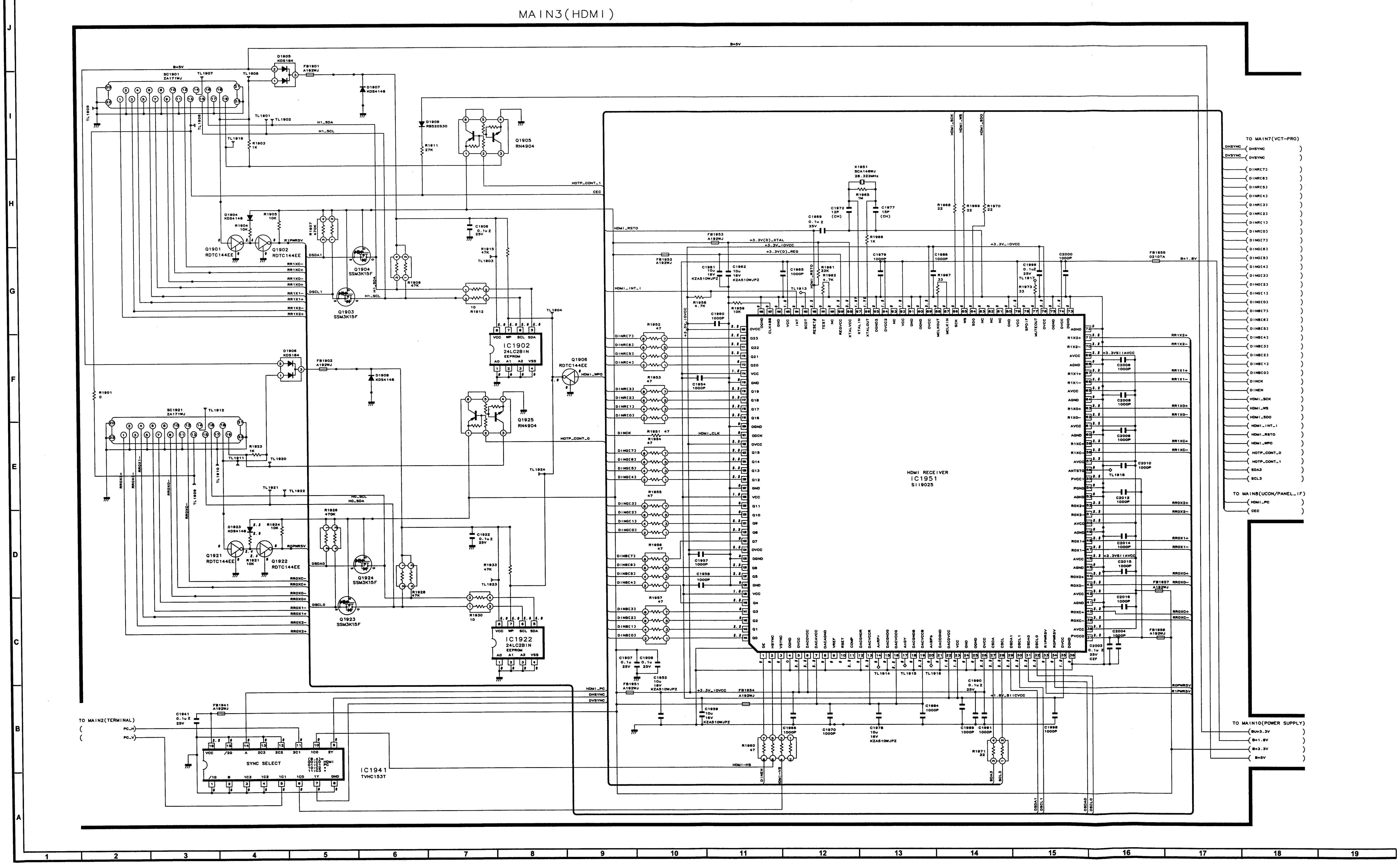
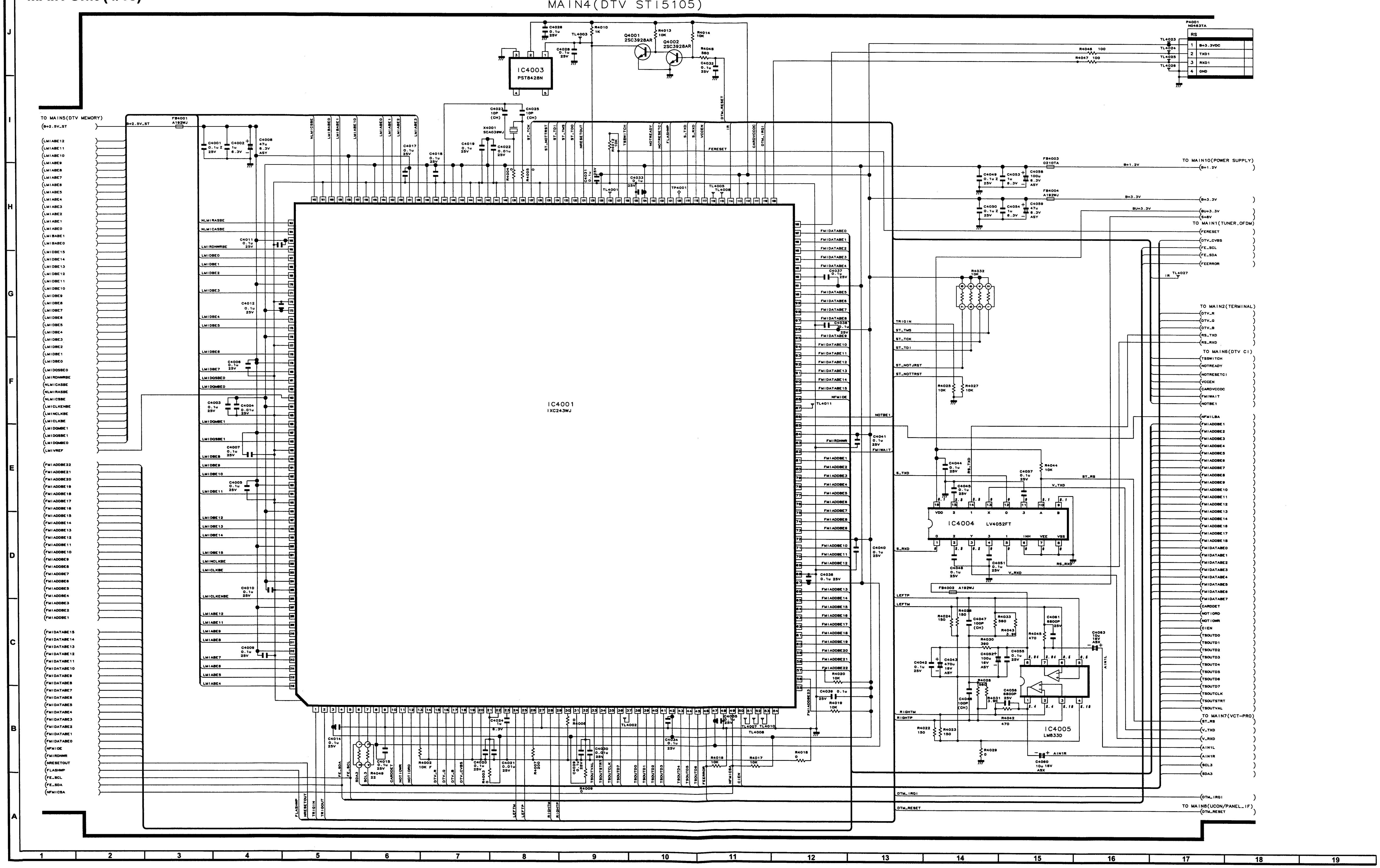
MAIN Unit (3/13)


MAIN3(HDMI)
B+5V
SC1901
ZA171WJ
SC1921
ZA171WJ
D1905
KDS184
FB1901
A192WJ
D1907
KDS4148
D1909
RB520S30
R1911
27K
Q1905
RN4904
Q1925
RN4904
HOTP_CONT_1
HOTP_CONT_0
CEC
HDMI_RSTO
HDMI_INT_1
H1_SDA
H1_SCL
TL1901
TL1902
TL1907
TL1908
TL1919
R1903
1K
D1904
KDS4148
R1905
10K
R1904
10K
Q1901
RDTC144EE
Q1902
RDTC144EE
R1PWRSV
R1907
470K
DSDA1
DSCL1
Q1904
SSM3K15F
Q1903
SSM3K15F
C1906
0.1u Z
25V
R1913
47K
TL1903
R1909
47K
R1912
10
IC1902
24LC21N
EEPROM
VCC WP SCL SDA
A0 A1 A2 VSS
TL1904
Q1906
RDTC144EE
HDMI_WPO
D1906
KDS184
FB1902
A192WJ
D1908
KDS4148
R1901
0
TL1911
TL1912
R1933
1K
TL1920
TL1924
TL1921
TL1922
D1923
KDS4148
R1924
10K
Q1921
RDTC144EE
Q1922
RDTC144EE
R1921
10K
R0PWRSV
R1926
470K
H0_SCL
H0_SDA
DSDA0
DSCL0
Q1924
SSM3K15F
Q1923
SSM3K15F
C1922
0.1u Z
25V
R1933
47K
TL1923
R1928
47K
R1930
10
IC1922
24LC21N
EEPROM
RR1XC- RR1XC+ RR1X0- RR1X0+ RR1X1- RR1X1+ RR1X2- RR1X2+
RR0XC- RR0XC+ RR0X0- RR0X0+ RR0X1- RR0X1+ RR0X2- RR0X2+
X1951
SCA146WJ
28.322MHz
R1965
1M
C1972
12P
(CH)
C1977
15P
(CH)
R1966
1K
C1969
0.1u Z
25V
R1968
22
R1969
22
R1970
22
HDMI_SCK
HDMI_WS
HDMI_SDO
FB1953
A192WJ
FB1952
A192WJ
+3.3V(D)_XTAL
+3.3V_IOVCC
+3.3V(D)_REG
C1961
10u
16V
KZA510WJPZ
C1962
10u
16V
KZA510WJPZ
C1965
1000P
R1961
22K
R1962
4.7K
TL1913
R1958
4.7K
R1959
10K
C1960
1000P
C1979
1000P
C1986
1000P
R1967
33
C1996
0.1u Z
25V
TL1917
R1973
33
C2000
1000P
FB1955
0210TA
B+1.8V
+3.3V_IOVCC
DINR[7] DINR[6] DINR[5] DINR[4] DINR[3] DINR[2] DINR[1] DINR[0]
DINCK
HDMI_CLK
DING[7] DING[6] DING[5] DING[4] DING[3] DING[2] DING[1] DING[0]
DINB[7] DINB[6] DINB[5] DINB[4] DINB[3] DINB[2] DINB[1] DINB[0]
R1952
47
R1953
47
R1951 47
R1954
47
R1955
47
R1956
47
R1957
47
C1954
1000P
C1957
1000P
C1958
1000P
HDMI RECEIVER
IC1951
SII9025
R1X2+ R1X2- AVCC AGND R1X1+ R1X1- AVCC AGND R1X0+ R1X0- AVCC AGND R1XC+ R1XC- AVCC ANTSTO PVCC1 PGND AGND R0X2+ R0X2- AVCC AGND R0X1+ R0X1- AVCC AGND R0X0+ R0X0- AVCC AGND R0XC+ R0XC- AVCC PVCC0
+3.3VSIIAVCC
C2006
1000P
C2008
1000P
C2009
1000P
C2010
1000P
TL1918
C2012
1000P
C2014
1000P
C2015
1000P
C2016
1000P
C2004
1000P
C2002
0.1u Z
25V
CZF
FB1957
A192WJ
FB1956
A192WJ
C1907
0.1u Z
25V
C1908
0.1u Z
25V
C1952
10u
16V
KZA510WJPZ
FB1951
A192WJ
FB1954
A192WJ
+3.3V_IOVCC
C1959
10u
16V
KZA510WJPZ
TL1914
TL1915
TL1916
C1990
0.1u Z
25V
+1.8V_SIICVCC
C1966
1000P
C1970
1000P
C1978
10u
16V
KZA510WJPZ
C1984
1000P
C1989
1000P
C1991
1000P
C1998
1000P
R1960
47
R1971
22
HDMI-HS
DINEN
SDA3
SCL3
DSDA1
DSCL1
DSDA0
DSCL0
R0PWRSV
R1PWRSV
TO MAIN7(VCT-PRO)
DHSYNC
DVSYNC
DINR[7] DINR[6] DINR[5] DINR[4] DINR[3] DINR[2] DINR[1] DINR[0]
DING[7] DING[6] DING[5] DING[4] DING[3] DING[2] DING[1] DING[0]
DINB[7] DINB[6] DINB[5] DINB[4] DINB[3] DINB[2] DINB[1] DINB[0]
DINCK
DINEN
HDMI_SCK
HDMI_WS
HDMI_SDO
HDMI_INT_1
HDMI_RSTO
HDMI_WPO
HOTP_CONT_0
HOTP_CONT_1
SDA3
SCL3
TO MAIN8(UCON/PANEL_IF)
HDMI_PC
CEC
TO MAIN10(POWER SUPPLY)
BU+3.3V
B+1.8V
B+3.3V
B+5V
HDMI_PC
DHSYNC
DVSYNC
TO MAIN2(TERMINAL)
PC_H
PC_V
C1941
0.1u Z
25V
FB1941
A192WJ
SYNC SELECT
IC1941
TVHC153T
VCC /2G A 2C3 2C2 2C1 1C0 2Y
/1G B 1C3 1C2 1C1 1C0 1Y GND
J I H G F E D C B A
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

MAIN Unit (4/13)


MAIN4(DTV STI5105)
IC4001
IXC243WJ
IC4003
PST8428N
IC4004
LV4052FT
IC4005
LM833D
Q4001
2SC3928AR
Q4002
2SC3928AR
X4001
P4001
RS
B+3.3VDC
TXD1
RXD1
GND
TO MAIN5(DTV MEMORY)
TO MAIN10(POWER SUPPLY)
TO MAIN1(TUNER,OFDM)
TO MAIN2(TERMINAL)
TO MAIN6(DTV CI)
TO MAIN7(VCT-PRO)
TO MAIN8(UCON/PANEL_IF)
J
I
H
G
F
E
D
C
B
A
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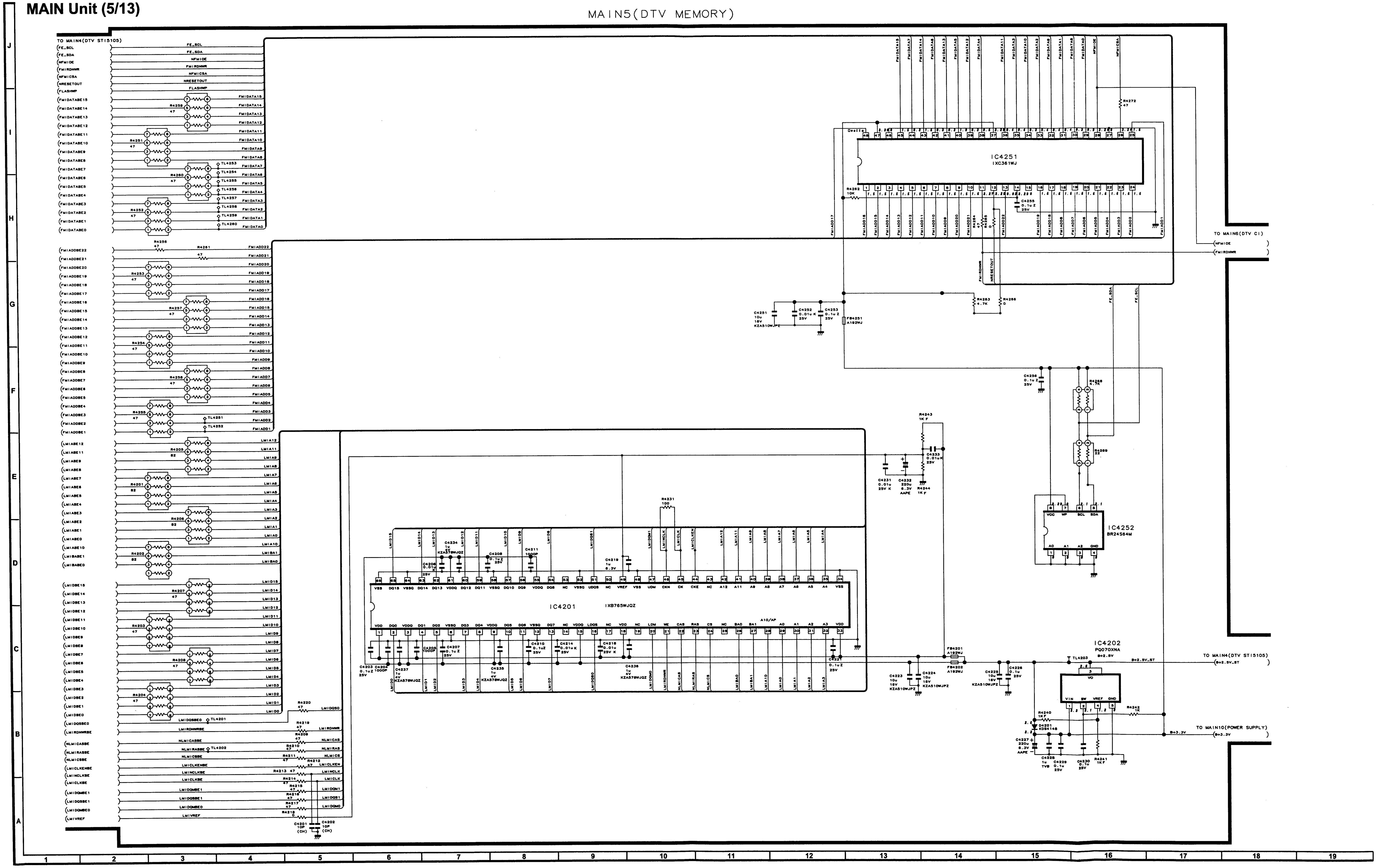
MAIN Unit (5/13)


MAIN5(DTV MEMORY)
TO MAIN4(DTV STI5105)
FE_SCL
FE_SDA
NFMIOE
FMIRDNWR
NFMICSA
NRESETOUT
FLASHWP
IC4251
IXC361WJ
IC4252
BR24S64M
IC4201
IXB765WJQZ
IC4202
PQ070XNA
TO MAIN6(DTV CI)
TO MAIN4(DTV STI5105)
B+2.5V_ST
TO MAIN10(POWER SUPPLY)
B+3.3V
J
I
H
G
F
E
D
C
B
A
1
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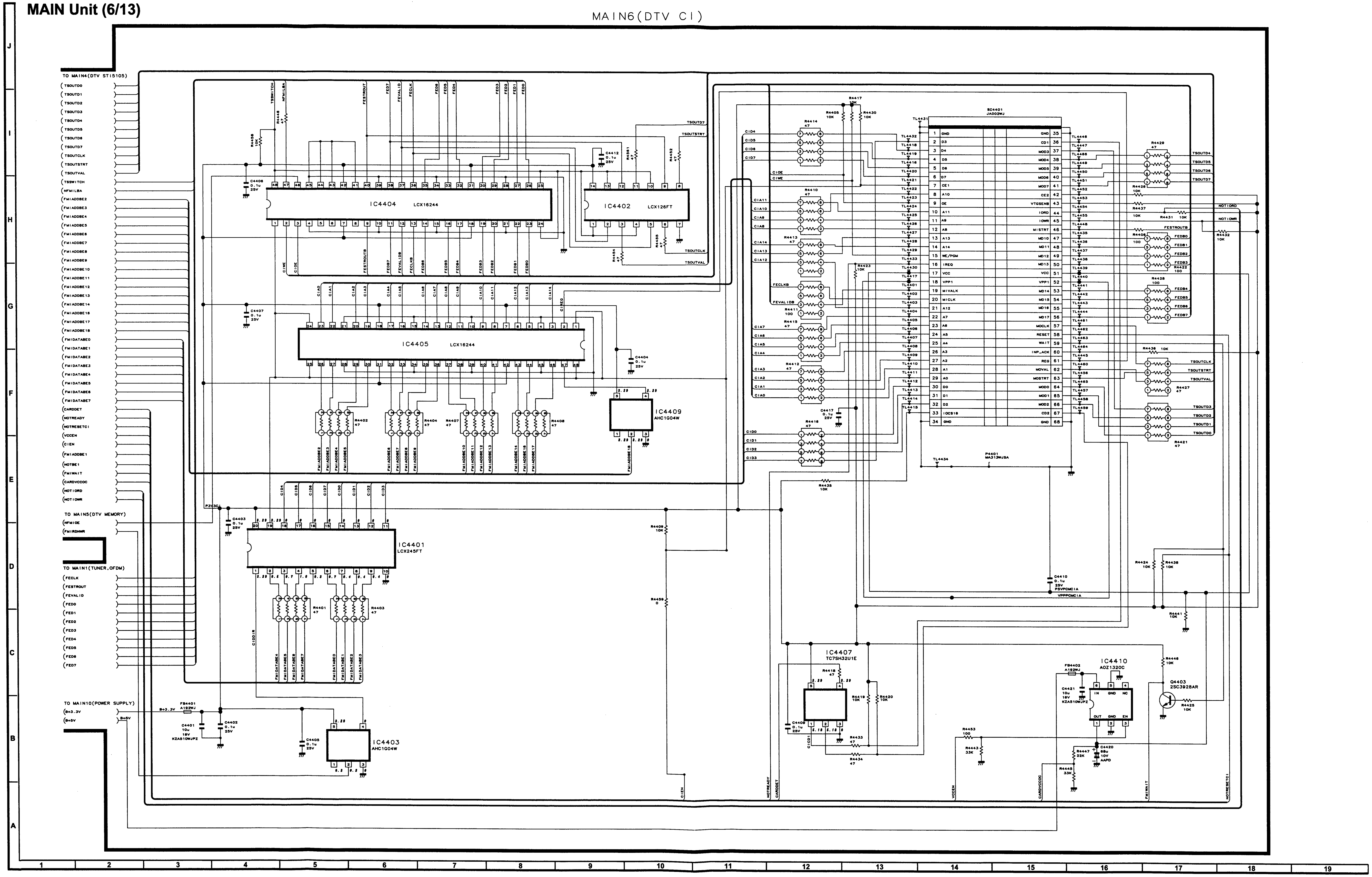
MAIN Unit (6/13)


MAIN6(DTV CI)
TO MAIN4(DTV STI5105)
TO MAIN5(DTV MEMORY)
TO MAIN1(TUNER,OFDM)
TO MAIN10(POWER SUPPLY)
IC4404 LCX16244
IC4402 LCX126FT
IC4405 LCX16244
IC4409 AHC1G04W
IC4401 LCX245FT
IC4403 AHC1G04W
IC4407 TC7SH32U1E
IC4410 AOZ1320C
Q4403 2SC3928AR
SC4401 JA002WJ
P4401 MA31WJSA
J
I
H
G
F
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C
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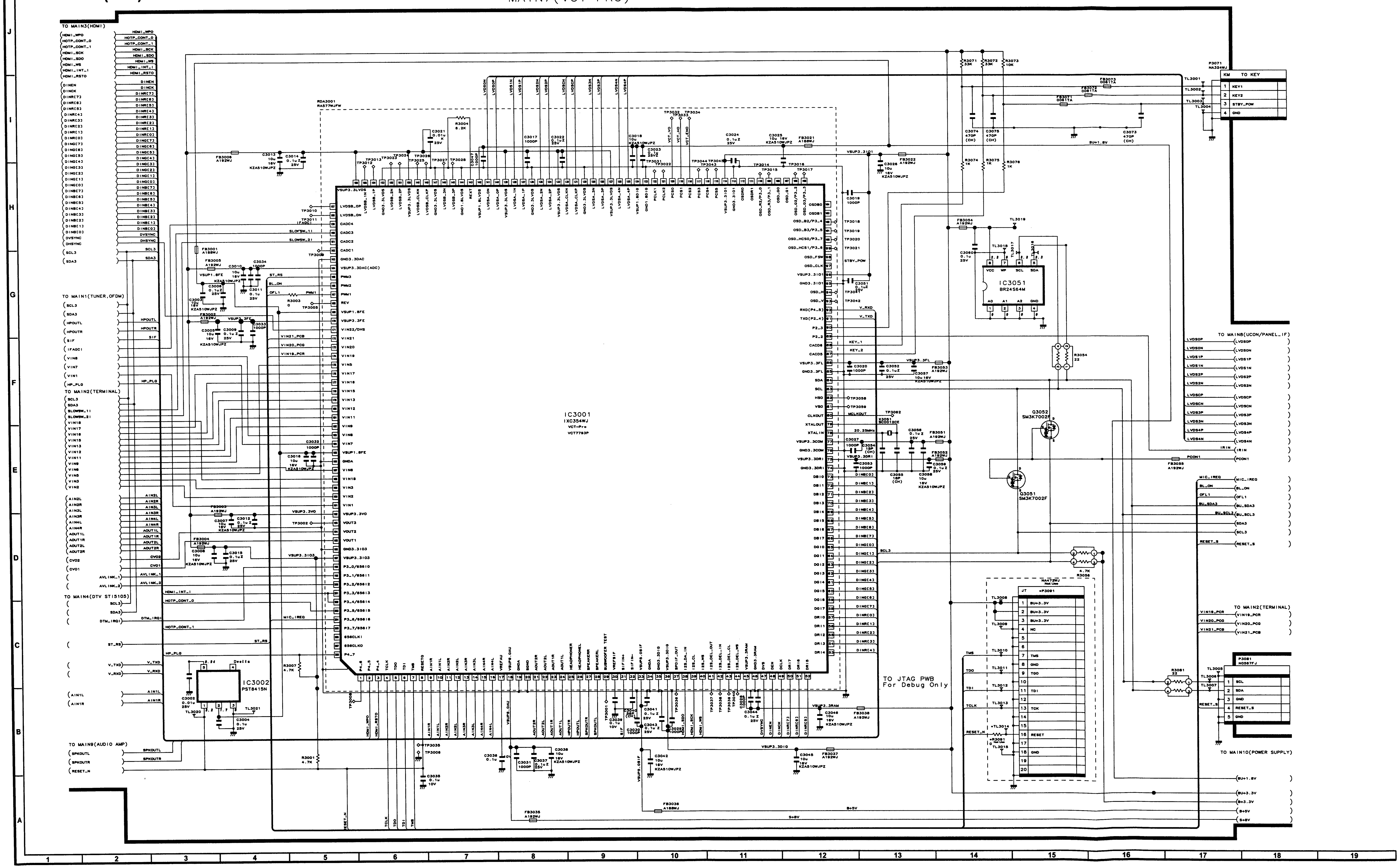
MAIN Unit (7/13)


MAIN7(VCT-PRO)
TO MAIN3(HDMI)
TO MAIN1(TUNER,OFDM)
TO MAIN2(TERMINAL)
TO MAIN4(DTV STi5105)
TO MAIN9(AUDIO AMP)
IC3001
IXC354WJ
VCT-Pro
VCT7783P
IC3002
PST8415N
IC3051
BR24S64M
Q3052
SM3K7002F
Q3051
SM3K7002F
X3051
P3071
TO KEY
KEY1
KEY2
STBY_POW
GND
TO MAIN8(UCON/PANEL_IF)
TO JTAG PWB
For Debug Only
P3081
TO MAIN2(TERMINAL)
TO MAIN10(POWER SUPPLY)
J
I
H
G
F
E
D
C
B
A
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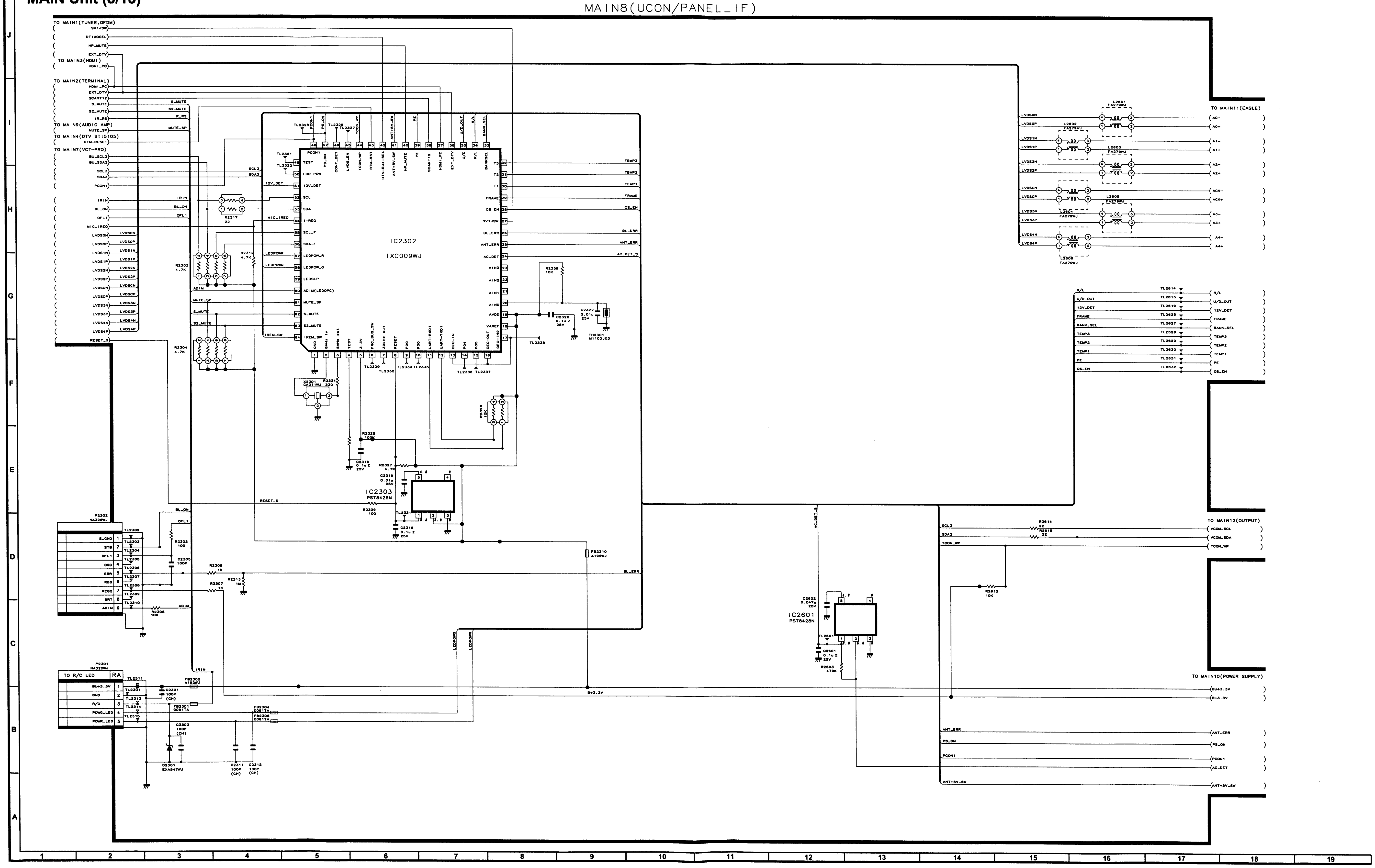
MAIN Unit (8/13)


MAIN8(UCON/PANEL_IF)
TO MAIN1(TUNER,OFDM)
TO MAIN3(HDMI)
TO MAIN2(TERMINAL)
TO MAIN9(AUDIO AMP)
TO MAIN4(DTV STI5105)
TO MAIN7(VCT-PRO)
TO MAIN11(EAGLE)
TO MAIN12(OUTPUT)
TO MAIN10(POWER SUPPLY)
IC2302
IXC009WJ
IC2303
PST8428N
IC2601
PST8428N
X2301
CA0111WJ
TH2301
M1103J03
P2302
NA32BWJ
P2301
NA32BWJ
TO R/C LED
RA
L2601
L2602
L2603
L2604
L2605
L2606
FA279WJ
FB2310
A192WJ
FB2303
A192WJ
D2301
B+3.3V
BU+3.3V
J
I
H
G
F
E
D
C
B
A
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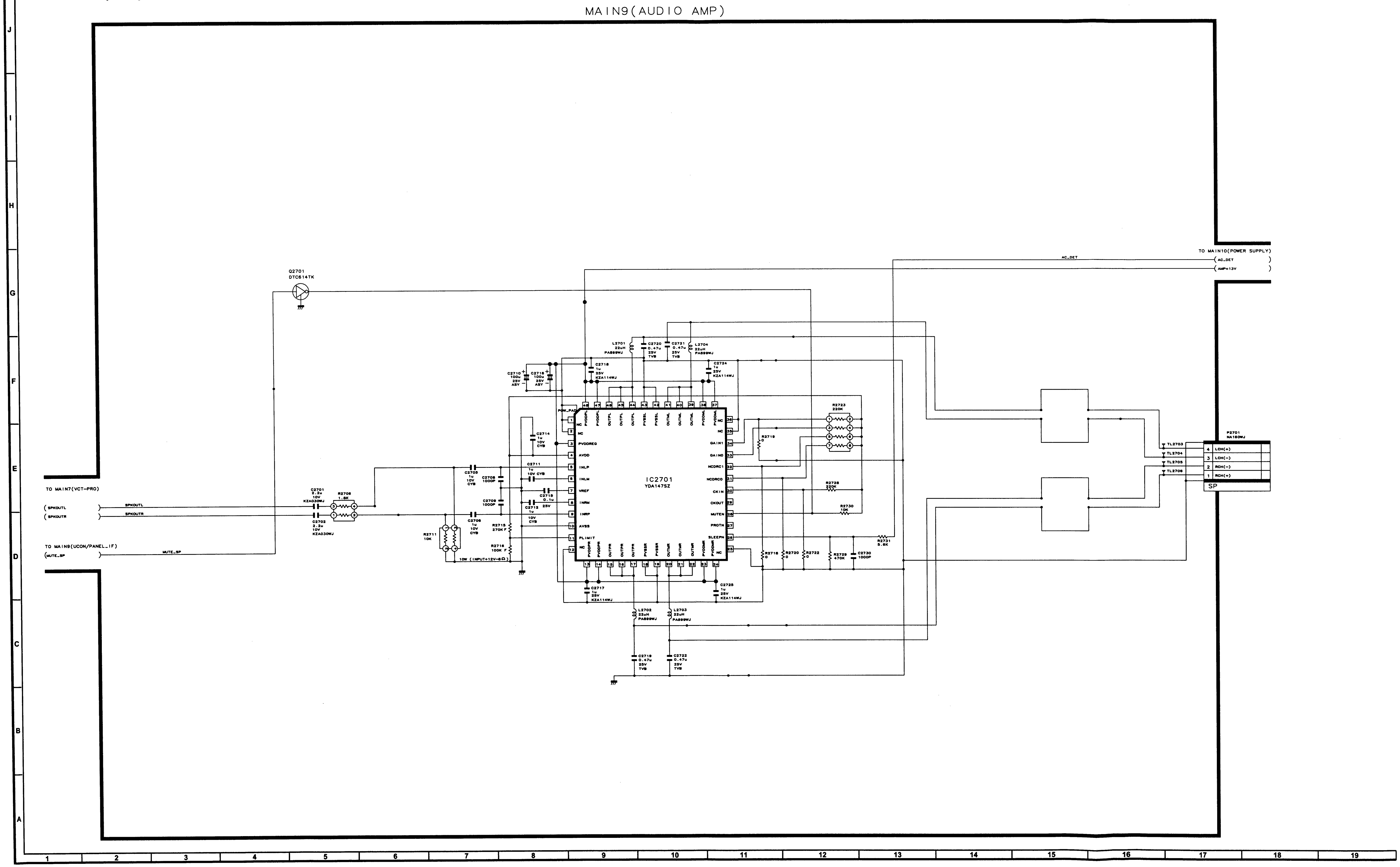
MAIN Unit (9/13)


MAIN9(AUDIO AMP)
TO MAIN7(VCT-PRO)
SPKOUTL
SPKOUTR
TO MAIN9(UCON/PANEL_IF)
MUTE_SP
Q2701
DTC614TK
C2701 2.2u 10V KZA030WJ
C2702 2.2u 10V KZA030WJ
R2706 1.8K
R2711 10K
C2705 1u 10V CYB
C2706 1u 10V CYB
C2708 1000P
C2709 1000P
R2715 270K F
R2716 100K F
10W (INPUT+12V-8Ω)
C2710 100u 25V ASY
C2716 100u 25V ASY
C2714 1u 10V CYB
C2711 1u 10V CYB
C2715 0.1u 25V
C2712 1u 10V CYB
C2718 1u 25V KZA114WJ
L2701 22uH PA899WJ
C2720 0.47u 25V TVB
C2721 0.47u 25V TVB
L2704 22uH PA899WJ
C2724 1u 25V KZA114WJ
POW_PAD
IC2701
YDA147SZ
NC
NC
PVDDREG
AVDD
INLP
INLM
VREF
INRM
INRP
AVSS
PLIMIT
NC
PVDDPL
PVDDPL
OUTPL
OUTPL
OUTPL
PVSSL
PVSSL
OUTML
OUTML
OUTML
PVDDML
PVDDML
NC
NC
GAIN1
GAIN0
NCDRC1
NCDRC0
CKIN
CKOUT
MUTEN
PROTN
SLEEPN
NC
PVDDPR
PVDDPR
OUTPR
OUTPR
OUTPR
PVSSR
PVSSR
OUTMR
OUTMR
OUTMR
PVDDMR
PVDDMR
C2717 1u 25V KZA114WJ
C2725 1u 25V KZA114WJ
L2702 22uH PA899WJ
L2703 22uH PA899WJ
C2719 0.47u 25V TVB
C2722 0.47u 25V TVB
R2723 220K
R2719 0
R2728 220K
R2730 10K
R2731 5.6K
R2718 0
R2720 0
R2722 0
R2729 470K
C2730 1000P
AC_DET
TO MAIN10(POWER SUPPLY)
AC_DET
AMP+13V
TL2703
TL2704
TL2705
TL2706
P2701
NA160WJ
4 LCH(+)
3 LCH(-)
2 RCH(-)
1 RCH(+)
SP
J
I
H
G
F
E
D
C
B
A
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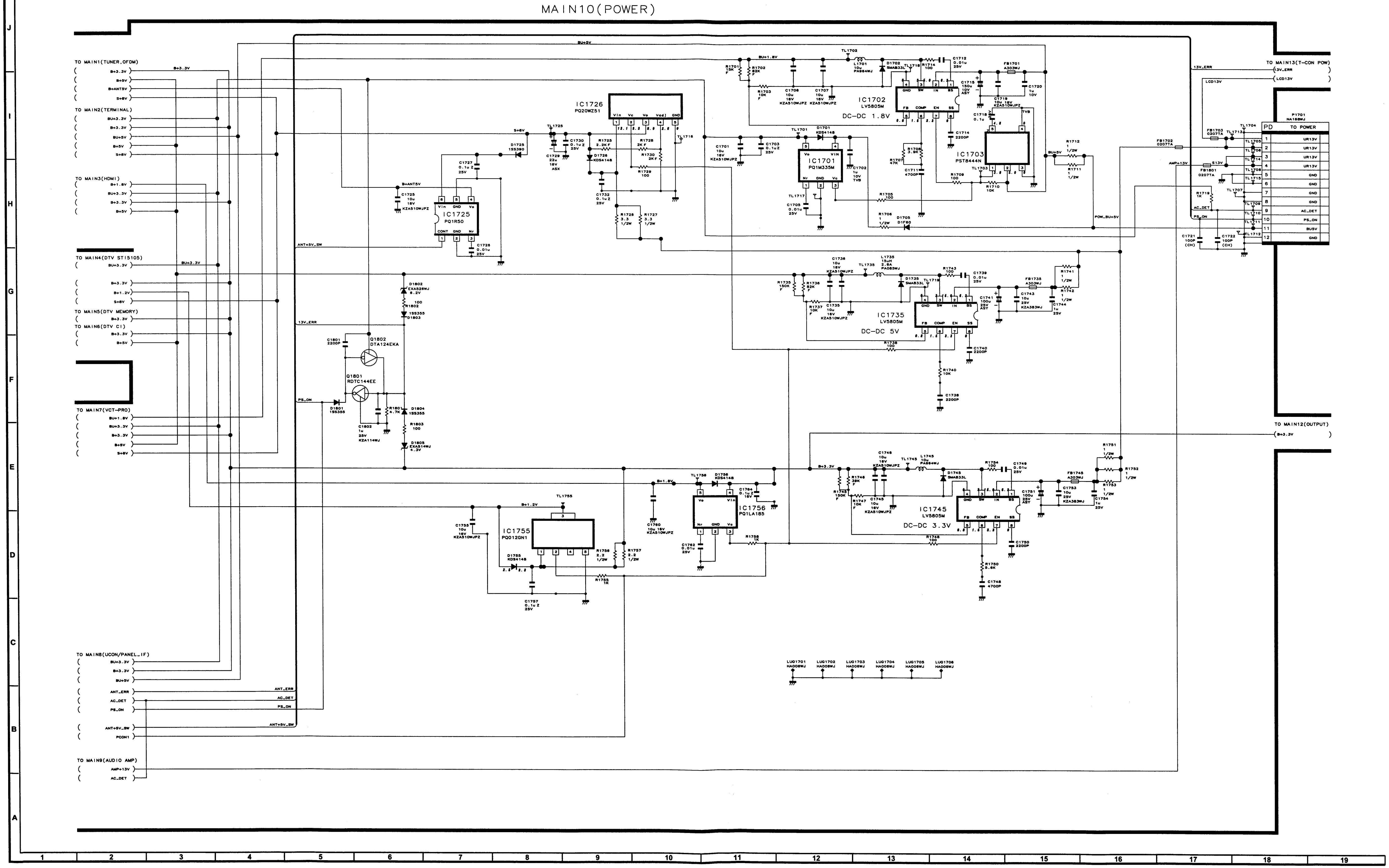
MAIN Unit (10/13)


MAIN10(POWER)
TO MAIN1(TUNER,OFDM)
TO MAIN2(TERMINAL)
TO MAIN3(HDMI)
TO MAIN4(DTV ST15105)
TO MAIN5(DTV MEMORY)
TO MAIN6(DTV CI)
TO MAIN7(VCT-PRO)
TO MAIN8(UCON/PANEL_IF)
TO MAIN9(AUDIO AMP)
TO MAIN13(T-CON POW)
TO MAIN12(OUTPUT)
P1701
TO POWER
UR13V
GND
AC_DET
PS_ON
BU5V
IC1726
PQ20WZ51
IC1725
PQ1R50
IC1701
PQ1M335M
IC1702
LV5805M
DC-DC 1.8V
IC1703
PST8444N
IC1735
LV5805M
DC-DC 5V
IC1745
LV5805M
DC-DC 3.3V
IC1755
PQ012GN1
IC1756
PQ1LA185
Q1802
DTA124EKA
Q1801
RDTC144EE
LUG1701
LUG1702
LUG1703
LUG1704
LUG1705
LUG1706
A
B
C
D
E
F
G
H
I
J
1
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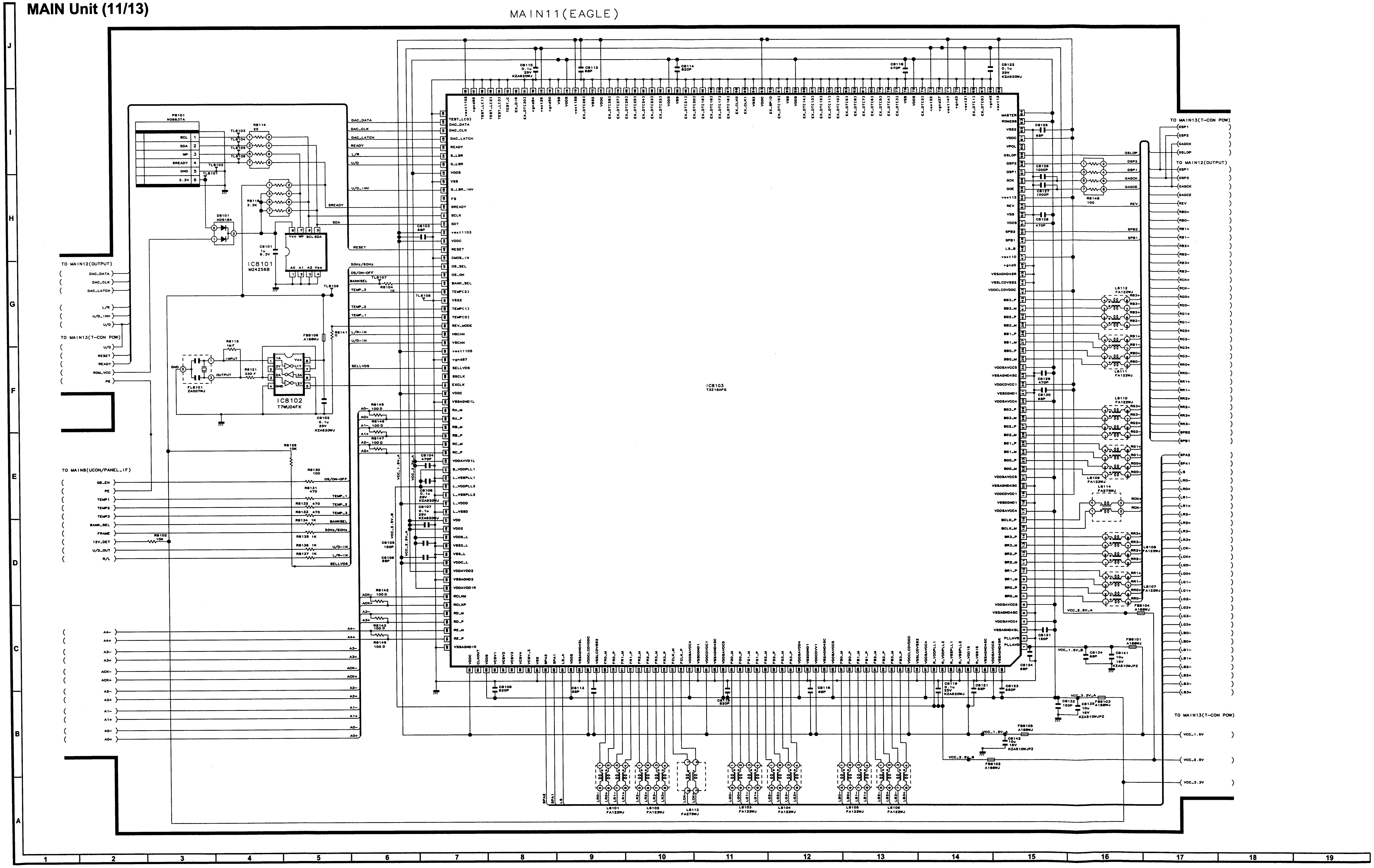
MAIN Unit (11/13)


MAIN11(EAGLE)
IC8103
T3Z18AFG
IC8101
M24256B
IC8102
TC7WU04FK
PS101
NO863TA
TO MAIN12(OUTPUT)
TO MAIN13(T-CON POW)
TO MAIN8(UCON/PANEL_IF)
TO MAIN13(T-CON POW)
TO MAIN12(OUTPUT)
VCC_1.5V
VCC_2.5V
VCC_3.3V
J
I
H
G
F
E
D
C
B
A
1
2
3
4
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7
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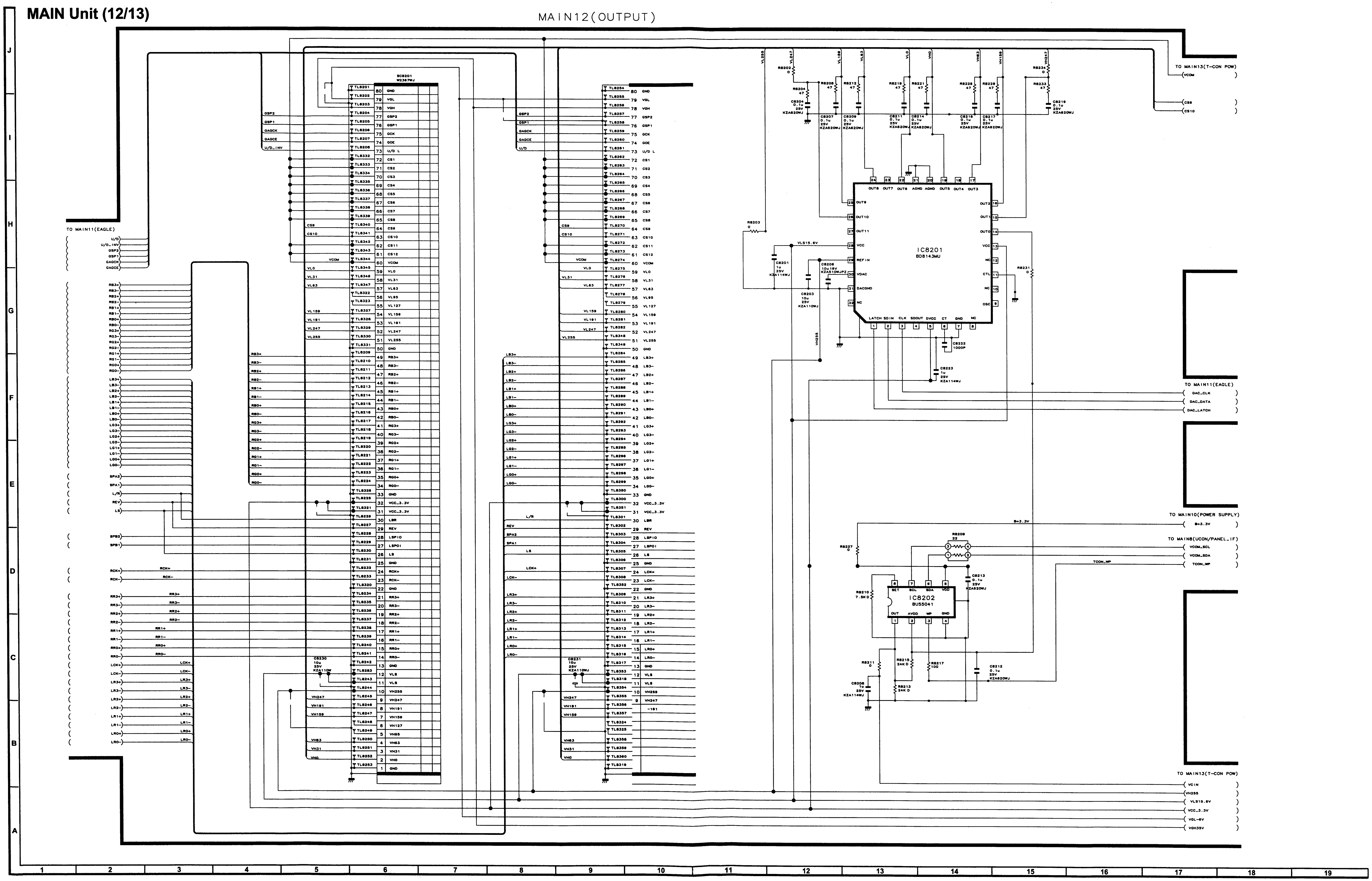
MAIN Unit (12/13)


MAIN12(OUTPUT)
SC8201
W2367WJ
IC8201
BD8143MU
IC8202
BU55041
TO MAIN11(EAGLE)
TO MAIN13(T-CON POW)
TO MAIN10(POWER SUPPLY)
TO MAIN8(UCON/PANEL_IF)
VCOM
CS9
CS10
DAC_CLK
DAC_DATA
DAC_LATCH
B+3.3V
VCOM_SCL
VCOM_SDA
TCON_WP
VCIN
VH255
VLS15.6V
VCC_3.3V
VGL-6V
VGH35V
J
I
H
G
F
E
D
C
B
A
1
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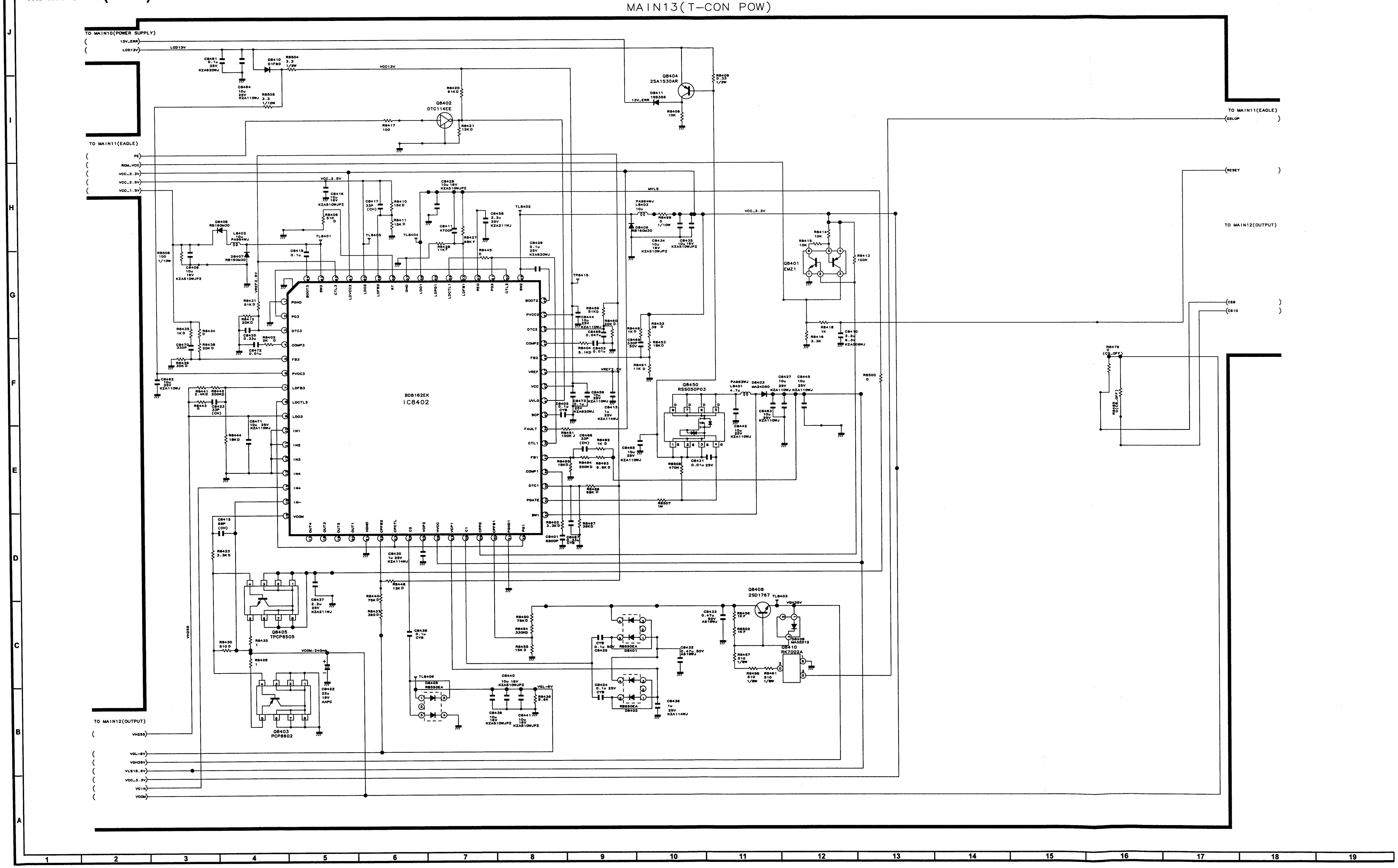
MAIN Unit (13/13)


MAIN13(T-CON POW)
TO MAIN10(POWER SUPPLY)
13V_ERR
LCD13V
VCC13V
TO MAIN11(EAGLE)
PE
ROM_VCC
VCC_3.3V
VCC_2.5V
VCC_1.5V
Q8404
2SA1530AR
Q8402
DTC114EE
BD8182EK
IC8402
Q8401
EMZ1
Q8450
RSS050P03
Q8405
TPCP8505
Q8403
PCP8502
Q8408
2SD1767
Q8410
RK7002A
D8401
D8402
D8405
RB530EA
TO MAIN11(EAGLE)
GSLOP
RESET
TO MAIN12(OUTPUT)
CS9
CS10
CS_OFF
TO MAIN12(OUTPUT)
VH25S
VGL-6V
VGH35V
VLS15.6V
VCC_3.3V
VCIN
VCOM
J
I
H
G
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D
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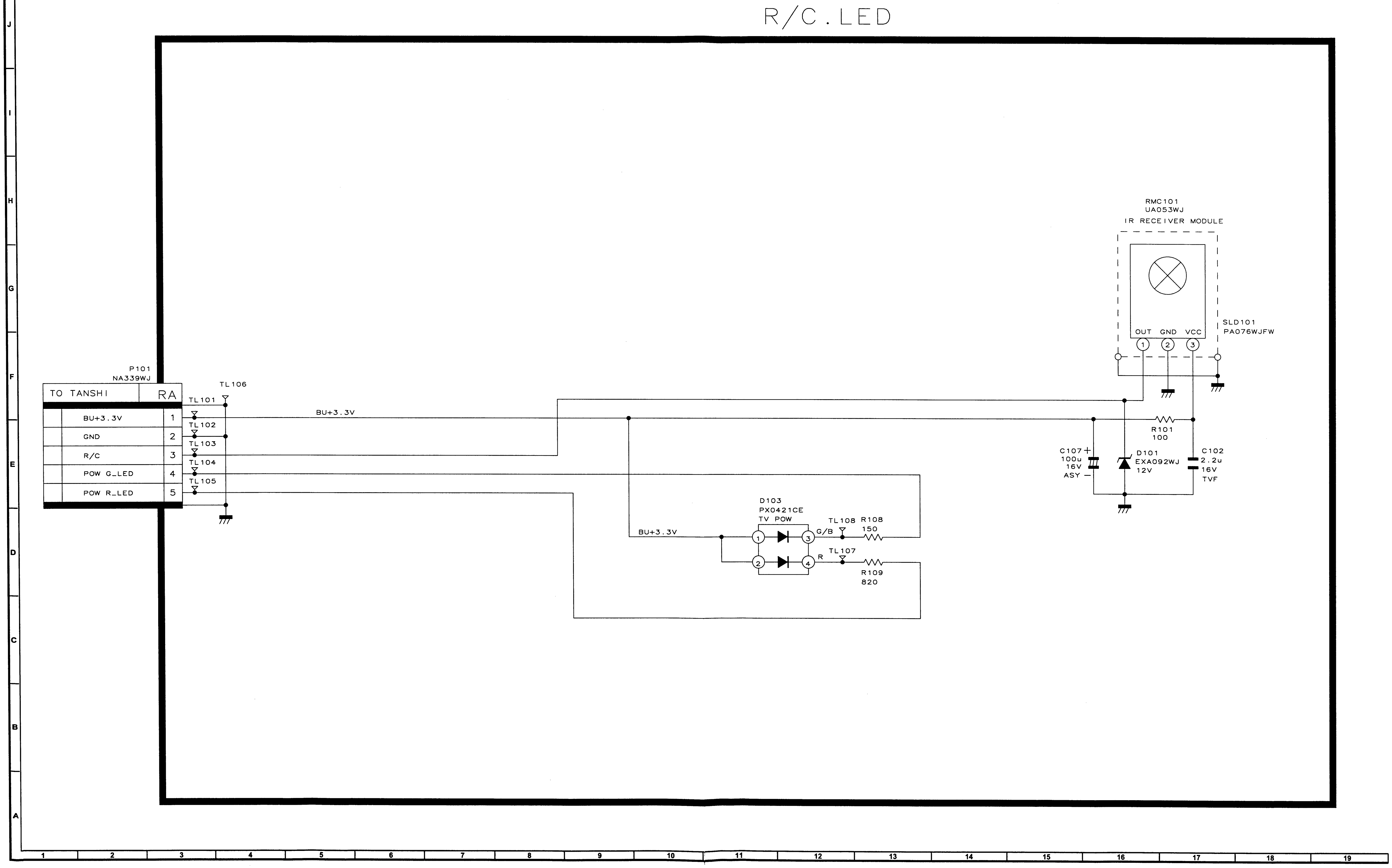
R/C, LED Unit


R/C.LED
P101
NA339WJ
TO TANSHI
RA
BU+3.3V
GND
R/C
POW G_LED
POW R_LED
1
2
3
4
5
TL106
TL101
TL102
TL103
TL104
TL105
BU+3.3V
RMC101
UA053WJ
IR RECEIVER MODULE
OUT
GND
VCC
SLD101
PA076WJFW
R101
100
C107
100u
16V
ASY
D101
EXA092WJ
12V
C102
2.2u
16V
TVF
D103
PX0421CE
TV POW
BU+3.3V
TL108
R108
150
G/B
TL107
R
R109
820
J
I
H
G
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C
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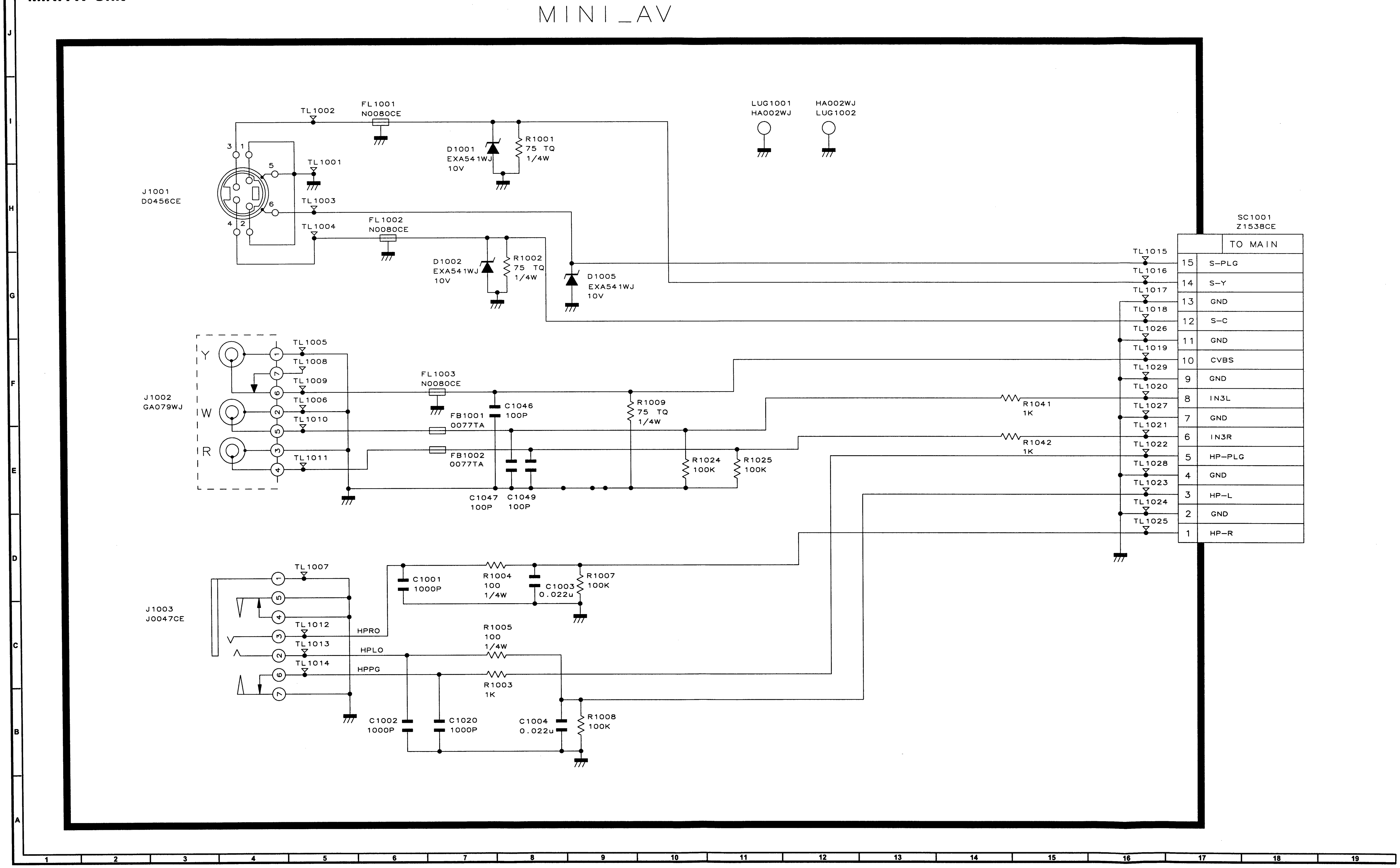
MINI AV Unit


MINI_AV
J
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9
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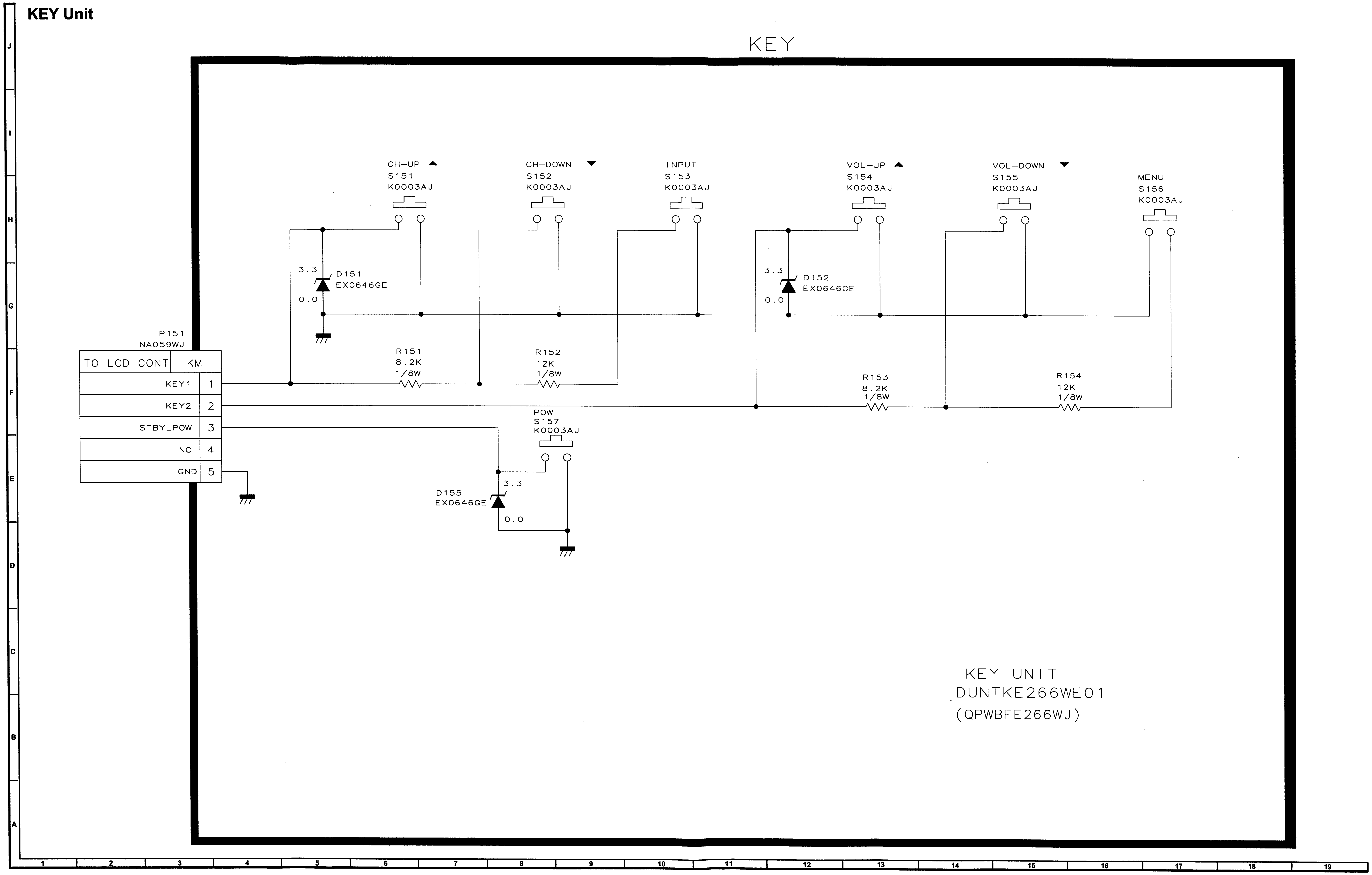
J1001
D0456CE
TL1002
FL1001
N0080CE
TL1001
TL1003
TL1004
FL1002
N0080CE
D1001
EXA541WJ
10V
R1001
75 TQ
1/4W
D1002
EXA541WJ
10V
R1002
75 TQ
1/4W
D1005
EXA541WJ
10V
LUG1001
HA002WJ
HA002WJ
LUG1002
J1002
GA079WJ
Y
W
R
TL1005
TL1008
TL1009
TL1006
TL1010
TL1011
FL1003
N0080CE
FB1001
0077TA
FB1002
0077TA
C1046
100P
C1047
100P
C1049
100P
R1009
75 TQ
1/4W
R1024
100K
R1025
100K
R1041
1K
R1042
1K
J1003
J0047CE
TL1007
TL1012
TL1013
TL1014
HPRO
HPLO
HPPG
C1001
1000P
R1004
100
1/4W
C1003
0.022u
R1007
100K
R1005
100
1/4W
R1003
1K
C1002
1000P
C1020
1000P
C1004
0.022u
R1008
100K
SC1001
Z1538CE
TO MAIN
TL1015
TL1016
TL1017
TL1018
TL1026
TL1019
TL1029
TL1020
TL1027
TL1021
TL1022
TL1028
TL1023
TL1024
TL1025
15 S-PLG
14 S-Y
13 GND
12 S-C
11 GND
10 CVBS
9 GND
8 IN3L
7 GND
6 IN3R
5 HP-PLG
4 GND
3 HP-L
2 GND
1 HP-R

KEY Unit


KEY
CH-UP ▲
S151
K0003AJ
CH-DOWN ▼
S152
K0003AJ
INPUT
S153
K0003AJ
VOL-UP ▲
S154
K0003AJ
VOL-DOWN ▼
S155
K0003AJ
MENU
S156
K0003AJ
3.3
D151
EX0646GE
0.0
3.3
D152
EX0646GE
0.0
P151
NA059WJ
TO LCD CONT
KM
KEY1 1
KEY2 2
STBY_POW 3
NC 4
GND 5
R151
8.2K
1/8W
R152
12K
1/8W
R153
8.2K
1/8W
R154
12K
1/8W
POW
S157
K0003AJ
3.3
D155
EX0646GE
0.0
KEY UNIT
DUNTKE266WE01
(QPWBFE266WJ)
J
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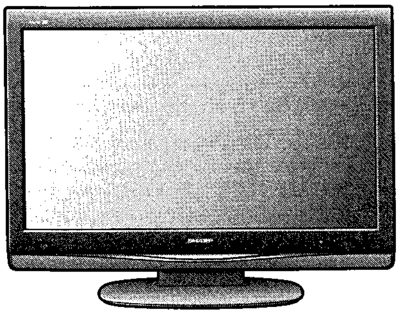
SHARP PARTS GUIDE

No. S38F8LC32D44E



LCD COLOUR TELEVISION

MODELS LC-32D44E/S/RU-BK/GY

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[1] PRINTED WIRING BOARD ASSEMBLIES

[2] LCD PANEL
(NOTE: THE PARTS HERE SHOWN ARE SUPPLIED AS AN ASSEMBLY BUT NOT INDEPENDENTLY.)

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[4] DUNTKE449FM02 (MAIN Unit)

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[7] CABINET PARTS

[8] LCD MODULE ASSEMBLY

[9] SUPPLIED ACCESSORIES

[10] PACKING PARTS

[11] SERVICE JIGS

Parts marked with "⚠" are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

SHARP CORPORATION

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for after sales service only.
The contents are subject to change without notice.

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
[1] PRINTED WIRING BOARD ASSEMBLIES					
N	DUNTKE266FM01	AR	N	R	KEY Unit
N	DUNTKE449FM02	CP	N	R	MAIN Unit
N	DUNTKE457FM02	AQ	N	R	LED Unit
N	DUNTKE491FM01	AY	N	R	MINI-AV Unit
N	RUNTKA396WJQZ	BV	N	P	POWER/INVERTER Unit
[2] LCD PANEL (NOTE: THE PARTS HERE SHOWN ARE SUPPLIED AS AN ASSEMBLY BUT NOT INDEPENDENTLY.)					
N	R1LK315T3GW30Y		N	J	32" LCD Panel Module
[3] DUNTKE266FM01(KEY Unit)					
D151	RH-EX0646GEZZY	AA		J	Zener Diode MTZJT-7215B
D152	RH-EX0646GEZZY	AA		J	Zener Diode MTZJT-7215B
D155	RH-EX0646GEZZY	AA		J	Zener Diode MTZJT-7215B
P151	QPLGNA059WJZZ	AC		J	Plug 5Pin(KM)
R151	VRD-RA2BE822JY	AA		J	Resistor 8.2k 1/8W Carbon
R152	VRD-RA2BE123JY	AA		J	Resistor 12k 1/8W Carbon
R153	VRD-RA2BE822JY	AA		J	Resistor 8.2k 1/8W Carbon
R154	VRD-RA2BE123JY	AA		J	Resistor 12k 1/8W Carbon
S151	QSW-K0003AJZZ+	AB		J	Switch CH UP
S152	QSW-K0003AJZZ+	AB		J	Switch CH DOWN
S153	QSW-K0003AJZZ+	AB		J	Switch CH INPUT
S154	QSW-K0003AJZZ+	AB		J	Switch VOL UP
S155	QSW-K0003AJZZ+	AB		J	Switch VOL DOWN
S156	QSW-K0003AJZZ+	AB		J	Switch CH MENU
S157	QSW-K0003AJZZ+	AB		J	Switch CH POWER
[4] DUNTKE449FM02 (MAIN Unit)					
C201	VCEASX1AN336MY	AC		J	Capacitor 33 10V Electrolytic
C207	VCEASX1CN477MY	AE		J	Capacitor 470 16V Electrolytic
C209	VCKYCZ1EB103KY	AA		J	Capacitor 0.01 25V Ceramic
C210	VCKYCZ1EB103KY	AA		J	Capacitor 0.01 25V Ceramic
C213	VCKYCZ1EB103KY	AA		J	Capacitor 0.01 25V Ceramic
C214	VCKYCZ1EB103KY	AA		J	Capacitor 0.01 25V Ceramic
C215	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C216	VCKYCY1HB104KY	AA		J	Capacitor 0.1 50V Ceramic
C217	VCKYCY1HB104KY	AA		J	Capacitor 0.1 50V Ceramic
C218	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C219	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C220	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C221	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C222	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C223	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C224	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C225	VCKYCZ1EB103KY	AA		J	Capacitor 0.01 25V Ceramic
C226	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C227	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C228	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C229	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C230	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C231	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C232	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C233	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C234	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C235	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C236	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C237	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C238	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C239	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C240	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C241	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C242	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C243	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C244	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C245	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C246	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C247	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C248	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C249	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C250	VCCCCZ1HH100DY	AB		J	Capacitor 10p 50V Ceramic
C251	VCCCCZ1HH100DY	AB		J	Capacitor 10p 50V Ceramic
C252	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C253	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C254	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C255	VCKYCZ1EB103KY	AA		J	Capacitor 0.01 25V Ceramic
C256	VCKYCY1HB104KY	AA		J	Capacitor 0.1 50V Ceramic
C269	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C271	VCEASX1CN107MY	AC		J	Capacitor 100 16V Electrolytic
C1005	VCKYCZ1EB103KY	AA		J	Capacitor 0.01 25V Ceramic
C1006	VCKYCY1HB104KY	AA		J	Capacitor 0.1 50V Ceramic
C1007	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C1008	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1009	VCEASX1VN226MY	AC		J	Capacitor 22 35V Electrolytic
C1010	VCEASX1VN226MY	AC		J	Capacitor 22 35V Electrolytic

[4] DUNTKE449FM02 (MAIN Unit)

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
C1011	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1012	VCEASY1CN476MY	AC		J	Capacitor 47 16V Electrolytic
C1013	VCCCCZ1HH470JY	AB		J	Capacitor 47p 50V Ceramic
C1014	VCCCCZ1HH470JY	AB		J	Capacitor 47p 50V Ceramic
C1015	VCCCCZ1HH330JY	AB		J	Capacitor 33p 50V Ceramic
C1016	VCCCCZ1HH330JY	AB		J	Capacitor 33p 50V Ceramic
C1017	VCKYCY1HB104KY	AA		J	Capacitor 0.1 50V Ceramic
C1018	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1019	VCEASX1CN226MY	AC		J	Capacitor 22 16V Electrolytic
C1031	VCCCCZ1HH470JY	AB		J	Capacitor 47p 50V Ceramic
C1032	VCCCCZ1HH100DY	AB		J	Capacitor 10p 50V Ceramic
C1033	VCCCCZ1HH470JY	AB		J	Capacitor 47p 50V Ceramic
C1034	VCEASX1CN106MY	AC		J	Capacitor 10 16V Electrolytic
C1035	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1101	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1102	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C1103	VCKYCY1CB104KY	AB		J	Capacitor 0.1 16V Ceramic
C1104	VCKYCY1CB104KY	AB		J	Capacitor 0.1 16V Ceramic
C1105	VCKYCY1CB104KY	AB		J	Capacitor 0.1 16V Ceramic
C1109	VCCCCZ1HH101JY	AB		J	Capacitor 100p 50V Ceramic
C1110	VCCCCZ1HH101JY	AB		J	Capacitor 100p 50V Ceramic
C1111	VCKYCY1CB104KY	AB		J	Capacitor 0.1 16V Ceramic
C1112	VCKYCY1CB104KY	AB		J	Capacitor 0.1 16V Ceramic
C1113	VCKYCY1CB104KY	AB		J	Capacitor 0.1 16V Ceramic
C1114	VCKYCZ1EB103KY	AA		J	Capacitor 0.01 25V Ceramic
C1115	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1120	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1121	VCEASY1CN227MY	AC		J	Capacitor 220 16V Electrolytic
C1122	VCEASY1CN227MY	AC		J	Capacitor 220 16V Electrolytic
C1127	VCKYCZ1HB221KY	AA		J	Capacitor 220p 50V Ceramic
C1128	VCEASY1CN227MY	AC		J	Capacitor 220 16V Electrolytic
C1129	VCEASY1CN227MY	AC		J	Capacitor 220 16V Electrolytic
C1130	VCKYCZ1EB103KY	AA		J	Capacitor 0.01 25V Ceramic
C1131	VCKYCZ1HB331KY	AA		J	Capacitor 330p 50V Ceramic
C1132	VCKYCZ1HB331KY	AA		J	Capacitor 330p 50V Ceramic
C1133	VCCCCZ1HH101JY	AB		J	Capacitor 100p 50V Ceramic
C1134	VCCCCZ1HH101JY	AB		J	Capacitor 100p 50V Ceramic
C1135	VCKYCZ1HB331KY	AA		J	Capacitor 330p 50V Ceramic
C1136	VCKYCZ1HB331KY	AA		J	Capacitor 330p 50V Ceramic
C1137	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C1138	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C1139	VCKYCZ1HB471KY	AB		J	Capacitor 470p 50V Ceramic
C1140	VCKYCZ1HB471KY	AB		J	Capacitor 470p 50V Ceramic
C1141	VCCCCZ1HH101JY	AB		J	Capacitor 100p 50V Ceramic
C1142	VCCCCZ1HH101JY	AB		J	Capacitor 100p 50V Ceramic
C1143	VCKYTV1AB105KY	AC		J	Capacitor 1 10V Ceramic
C1144	VCKYCZ1HB471KY	AB		J	Capacitor 470p 50V Ceramic
C1145	VCKYCZ1HB471KY	AB		J	Capacitor 470p 50V Ceramic
C1146	VCKYTV1AB105KY	AC		J	Capacitor 1 10V Ceramic
C1147	VCKYTV1AB105KY	AC		J	Capacitor 1 10V Ceramic
C1148	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C1149	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C1150	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1151	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1152	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1153	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1154	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1155	VCKYTV1AB105KY	AC		J	Capacitor 1 10V Ceramic
C1156	VCKYTV1AB105KY	AC		J	Capacitor 1 10V Ceramic
C1157	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1158	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1159	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1160	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1161	VCCCCZ1HH101JY	AB		J	Capacitor 100p 50V Ceramic
C1162	VCCCCZ1HH101JY	AB		J	Capacitor 100p 50V Ceramic
C1201	VCKYCZ1AB104KY	AB		J	Capacitor 0.1 10V Ceramic
C1202	VCKYCZ1AB104KY	AB		J	Capacitor 0.1 10V Ceramic
C1203	VCKYCZ1AB104KY	AB		J	Capacitor 0.1 10V Ceramic
C1204	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C1301	VCKYCZ1HB221KY	AA		J	Capacitor 220p 50V Ceramic
C1302	VCKYCZ1HB221KY	AA		J	Capacitor 220p 50V Ceramic
C1303	VCKYCZ1HB221KY	AA		J	Capacitor 220p 50V Ceramic
C1304	VCKYCZ1HB221KY	AA		J	Capacitor 220p 50V Ceramic
C1305	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C1306	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C1307	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C1308	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C1309	VCKYTV1AB105KY	AC		J	Capacitor 1 10V Ceramic
C1310	VCKYTV1AB105KY	AC		J	Capacitor 1 10V Ceramic
C1311	VCKYTV1AB105KY	AC		J	Capacitor 1 10V Ceramic
C1312	VCKYTV1AB105KY	AC		J	Capacitor 1 10V Ceramic
C1313	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C1314	VCCCCZ1HH560JY	AB		J	Capacitor 56p 50V Ceramic
C1315	VCKYTV1AB105KY	AC		J	Capacitor 1 10V Ceramic
C1316	VCKYTV1AB105KY	AC		J	Capacitor 1 10V Ceramic

[4] DUNTKE449FM02 (MAIN Unit)

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
C1317	VCCCCZ1HH560JY	AB		J	Capacitor 56p 50V Ceramic
C1318	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C1319	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1320	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1321	VCCCCZ1HH101JY	AB		J	Capacitor 100p 50V Ceramic
C1322	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1323	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1324	VCCCCZ1HH101JY	AB		J	Capacitor 100p 50V Ceramic
C1325	VCEASX1CN106MY	AC		J	Capacitor 10 16V Electrolytic
C1326	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C1327	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1328	VCCCCZ1HH101JY	AB		J	Capacitor 100p 50V Ceramic
C1329	VCCCCZ1HH101JY	AB		J	Capacitor 100p 50V Ceramic
C1330	VCKYTV1AB105KY	AC		J	Capacitor 1 10V Ceramic
C1331	VCKYTV1AB105KY	AC		J	Capacitor 1 10V Ceramic
C1332	VCKYTV1CB105KY	AC		J	Capacitor 1 16V Ceramic
C1333	VCKYTV1CB105KY	AC		J	Capacitor 1 16V Ceramic
C1401	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1402	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C1404	VCKYTV1AB105KY	AC		J	Capacitor 1 10V Ceramic
C1405	VCKYTV1AB105KY	AC		J	Capacitor 1 10V Ceramic
C1406	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C1408	VCKYTV1AB105KY	AC		J	Capacitor 1 10V Ceramic
C1409	VCKYTV1AB105KY	AC		J	Capacitor 1 10V Ceramic
C1411	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1412	VCKYTV1AB105KY	AC		J	Capacitor 1 10V Ceramic
C1413	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1414	VCKYTV1AB105KY	AC		J	Capacitor 1 10V Ceramic
C1415	VCKYCY1CB104KY	AB		J	Capacitor 0.1 16V Ceramic
C1416	VCKYCY1CB104KY	AB		J	Capacitor 0.1 16V Ceramic
C1417	VCKYCY1CB104KY	AB		J	Capacitor 0.1 16V Ceramic
C1501	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1502	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C1503	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C1504	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C1505	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C1506	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C1507	VCKYCY1CB104KY	AB		J	Capacitor 0.1 16V Ceramic
C1508	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C1701	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1702	VCKYTV1AB105KY	AC		J	Capacitor 1 10V Ceramic
C1703	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C1705	VCKYCZ1EB103KY	AA		J	Capacitor 0.01 25V Ceramic
C1706	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1707	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1711	VCKYCZ1EB472KY	AB		J	Capacitor 4700p 25V Ceramic
C1712	VCKYCZ1EB103KY	AA		J	Capacitor 0.01 25V Ceramic
C1714	VCKYCZ1HB222KY	AB		J	Capacitor 2200p 50V Ceramic
C1715	VCEASY1AN157MY	AC		J	Capacitor 150 10V Electrolytic
C1718	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C1719	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1720	VCKYTV1AB105KY	AC		J	Capacitor 1 10V Ceramic
C1721	VCCCCZ1HH101JY	AB		J	Capacitor 100p 50V Ceramic
C1722	VCCCCZ1HH101JY	AB		J	Capacitor 100p 50V Ceramic
C1725	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1726	VCKYCZ1EB103KY	AA		J	Capacitor 0.01 25V Ceramic
C1727	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C1729	VCEASX1CN226MY	AC		J	Capacitor 22 16V Electrolytic
C1730	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C1732	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C1735	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1736	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1738	VCKYCZ1HB222KY	AB		J	Capacitor 2200p 50V Ceramic
C1739	VCKYCZ1EB103KY	AA		J	Capacitor 0.01 25V Ceramic
C1740	VCKYCZ1HB222KY	AB		J	Capacitor 2200p 50V Ceramic
C1741	VCEASY1EN107MY	AC		J	Capacitor 100 25V Electrolytic
C1743	RC-KZA383WJZZY	AC		J	Capacitor 10 25V Ceramic
C1744	RC-KZA114WJZZY	AB		J	Capacitor 1 25V Ceramic
C1745	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1746	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1748	VCKYCZ1HB472KY	AA		J	Capacitor 4700p 50V Ceramic
C1749	VCKYCZ1EB103KY	AA		J	Capacitor 0.01 25V Ceramic
C1750	VCKYCZ1HB222KY	AB		J	Capacitor 2200p 50V Ceramic
C1751	VCEASY1EN107MY	AC		J	Capacitor 100 25V Electrolytic
C1753	RC-KZA383WJZZY	AC		J	Capacitor 10 25V Ceramic
C1754	RC-KZA114WJZZY	AB		J	Capacitor 1 25V Ceramic
C1755	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1757	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C1760	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1762	VCKYCZ1EB103KY	AA		J	Capacitor 0.01 25V Ceramic
C1764	VCKYCZ1CF104ZY	AA		J	Capacitor 0.1 16V Ceramic
C1801	VCKYCZ1HB222KY	AB		J	Capacitor 2200p 50V Ceramic
C1802	RC-KZA114WJZZY	AB		J	Capacitor 1 25V Ceramic
C1906	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C1907	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic

[4] DUNTKE449FM02 (MAIN Unit)

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
C1908	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C1922	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C1941	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C1952	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1954	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C1957	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C1958	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C1959	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1960	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C1961	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1962	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1965	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C1966	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C1969	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C1970	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C1972	VCCCCZ1HH120JY	AB		J	Capacitor 12p 50V Ceramic
C1977	VCCCCZ1HH150JY	AB		J	Capacitor 15p 50V Ceramic
C1978	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C1979	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C1984	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C1986	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C1989	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C1990	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C1991	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C1996	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C1998	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C2000	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C2002	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C2004	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C2006	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C2008	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C2009	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C2010	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C2012	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C2014	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C2015	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C2016	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C2301	VCCCCZ1HH101JY	AB		J	Capacitor 100p 50V Ceramic
C2303	VCCCCZ1HH101JY	AB		J	Capacitor 100p 50V Ceramic
C2305	VCCCCZ1HH101JY	AB		J	Capacitor 100p 50V Ceramic
C2311	VCCCCZ1HH101JY	AB		J	Capacitor 100p 50V Ceramic
C2312	VCCCCZ1HH101JY	AB		J	Capacitor 100p 50V Ceramic
C2316	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C2318	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C2319	VCKYCZ1EB103KY	AA		J	Capacitor 0.01 25V Ceramic
C2320	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C2322	VCKYCZ1EB103KY	AA		J	Capacitor 0.01 25V Ceramic
C2601	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C2602	VCKYCY1EB473KY	AA		J	Capacitor 0.047 25V Ceramic
C2701	RC-KZA030WJZZY	AB		J	Capacitor 2.2 10V Ceramic
C2702	RC-KZA030WJZZY	AB		J	Capacitor 2.2 10V Ceramic
C2705	VCKYCY1AB105KY	AB		J	Capacitor 1 10V Ceramic
C2706	VCKYCY1AB105KY	AB		J	Capacitor 1 10V Ceramic
C2708	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C2709	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C2710	VCEASY1EN107MY	AC		J	Capacitor 100 25V Electrolytic
C2711	VCKYCY1AB105KY	AB		J	Capacitor 1 10V Ceramic
C2712	VCKYCY1AB105KY	AB		J	Capacitor 1 10V Ceramic
C2714	VCKYCY1AB105KY	AB		J	Capacitor 1 10V Ceramic
C2715	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C2716	VCEASY1EN107MY	AC		J	Capacitor 100 25V Electrolytic
C2717	RC-KZA114WJZZY	AB		J	Capacitor 1 25V Ceramic
C2718	RC-KZA114WJZZY	AB		J	Capacitor 1 25V Ceramic
C2719	VCKYTV1EB474KY	AC		J	Capacitor 0.47 25V Ceramic
C2720	VCKYTV1EB474KY	AC		J	Capacitor 0.47 25V Ceramic
C2721	VCKYTV1EB474KY	AC		J	Capacitor 0.47 25V Ceramic
C2722	VCKYTV1EB474KY	AC		J	Capacitor 0.47 25V Ceramic
C2724	RC-KZA114WJZZY	AB		J	Capacitor 1 25V Ceramic
C2725	RC-KZA114WJZZY	AB		J	Capacitor 1 25V Ceramic
C2730	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C3002	VCKYCZ1EB103KY	AA		J	Capacitor 0.01 25V Ceramic
C3003	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C3004	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C3005	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C3006	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C3007	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C3008	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C3009	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C3010	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C3011	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C3012	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C3013	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C3014	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C3015	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C3016	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
[4] DUNTKE449FM02 (MAIN Unit)					
C3017	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C3018	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C3019	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C3020	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C3021	VCKYCZ1EB103KY	AA		J	Capacitor 0.01 25V Ceramic
C3022	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C3023	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C3024	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C3025	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C3026	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C3027	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C3028	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C3029	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C3030	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C3031	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C3032	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C3033	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C3034	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C3035	VCKYCZ1AB104KY	AB		J	Capacitor 0.1 10V Ceramic
C3036	VCKYCZ1AB104KY	AB		J	Capacitor 0.1 10V Ceramic
C3037	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C3038	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C3039	VCKYCZ1AB104KY	AB		J	Capacitor 0.1 10V Ceramic
C3040	VCCCCZ1HH560JY	AB		J	Capacitor 56p 50V Ceramic
C3041	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C3042	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C3043	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C3044	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C3045	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C3046	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C3047	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C3051	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C3052	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C3053	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C3054	VCCCCZ1HH150JY	AB		J	Capacitor 15p 50V Ceramic
C3055	VCCCCZ1HH180JY	AB		J	Capacitor 18p 50V Ceramic
C3056	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C3057	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C3058	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C3059	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C3060	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C3073	VCCCCZ1HH471JY	AA		J	Capacitor 470p 50V Ceramic
C3074	VCCCCZ1HH471JY	AA		J	Capacitor 470p 50V Ceramic
C3075	VCCCCZ1HH471JY	AA		J	Capacitor 470p 50V Ceramic
C4001	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4002	VCKYCZ0JF105ZY	AA		J	Capacitor 1 6.3V Ceramic
C4003	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4004	VCKYCZ1EB103KY	AA		J	Capacitor 0.01 25V Ceramic
C4005	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4006	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4007	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4008	VCEASY0JN476MY	AC		J	Capacitor 47 6.3V Electrolytic
C4009	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4010	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4011	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4012	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4014	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4015	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4017	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4018	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4019	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4020	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4021	VCKYCZ1EB103KY	AA		J	Capacitor 0.01 25V Ceramic
C4022	VCKYCZ1EB103KY	AA		J	Capacitor 0.01 25V Ceramic
C4023	VCCCCZ1HH100DY	AB		J	Capacitor 10p 50V Ceramic
C4024	VCKYCZ0JF105ZY	AA		J	Capacitor 1 6.3V Ceramic
C4025	VCCCCZ1HH100DY	AB		J	Capacitor 10p 50V Ceramic
C4026	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4028	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4029	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4030	VCKYCZ1EB103KY	AA		J	Capacitor 0.01 25V Ceramic
C4031	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4032	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4033	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4034	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4035	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4036	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4037	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4038	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4039	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4040	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4041	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4042	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4043	VCEASY1CN477MY	AD		J	Capacitor 470 16V Electrolytic
C4044	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
[4] DUNTKE449FM02 (MAIN Unit)					
C4045	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4046	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4047	VCCCCZ1HH101JY	AB		J	Capacitor 100p 50V Ceramic
C4048	VCCCCZ1HH101JY	AB		J	Capacitor 100p 50V Ceramic
C4049	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4050	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4051	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4052	VCEASY1CN107MY	AC		J	Capacitor 100 16V Electrolytic
C4053	VCKYCZ0JF105ZY	AA		J	Capacitor 1 6.3V Ceramic
C4054	VCKYCZ0JF105ZY	AA		J	Capacitor 1 6.3V Ceramic
C4055	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4056	VCKYCZ1EB682KY	AB		J	Capacitor 6800p 25V Ceramic
C4057	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4058	VCEASY0JN107MY	AC		J	Capacitor 100 6.3V Electrolytic
C4059	VCEASY0JN476MY	AC		J	Capacitor 47 6.3V Electrolytic
C4060	VCEASX1CN106MY	AC		J	Capacitor 10 16V Electrolytic
C4061	VCKYCZ1EB682KY	AB		J	Capacitor 6800p 25V Ceramic
C4063	VCEASX1CN106MY	AC		J	Capacitor 10 16V Electrolytic
C4201	VCCCCZ1HH100DY	AB		J	Capacitor 10p 50V Ceramic
C4202	VCCCCZ1HH100DY	AB		J	Capacitor 10p 50V Ceramic
C4203	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4204	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C4205	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C4206	VCKYCZ1EB103KY	AA		J	Capacitor 0.01 25V Ceramic
C4207	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4208	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4210	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4211	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C4214	VCKYCZ1EB103KY	AA		J	Capacitor 0.01 25V Ceramic
C4218	VCKYCZ1EB103KY	AA		J	Capacitor 0.01 25V Ceramic
C4219	VCKYCZ0JF105ZY	AA		J	Capacitor 1 6.3V Ceramic
C4221	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4223	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C4224	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C4225	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C4226	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4227	VCAAPE0JJ227MY	AE		J	Capacitor 220 6.3V Electrolytic
C4228	VCKYTV1AB105KY	AC		J	Capacitor 1 10V Ceramic
C4229	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4230	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4231	VCKYCZ1EB103KY	AA		J	Capacitor 0.01 25V Ceramic
C4232	VCAAPE0JJ227MY	AE		J	Capacitor 220 6.3V Electrolytic
C4233	VCKYCZ1EB103KY	AA		J	Capacitor 0.01 25V Ceramic
C4234	RC-KZA578WJQZY		N	J	Capacitor 1 4V Ceramic
C4235	RC-KZA578WJQZY		N	J	Capacitor 1 4V Ceramic
C4236	RC-KZA578WJQZY		N	J	Capacitor 1 4V Ceramic
C4237	RC-KZA578WJQZY		N	J	Capacitor 1 4V Ceramic
C4251	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C4252	VCKYCZ1EB103KY	AA		J	Capacitor 0.01 25V Ceramic
C4253	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4255	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4256	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4401	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C4402	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4403	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4404	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4405	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4406	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4407	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4409	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4410	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4412	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4417	VCKYCZ1EF104ZY	AA		J	Capacitor 0.1 25V Ceramic
C4420	VCAAPD1AJ686MY	AE		J	Capacitor 68 10V Electrolytic
C4421	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C8101	VCKYCZ0JF105ZY	AA		J	Capacitor 1 6.3V Ceramic
C8102	RC-KZA620WJZZY	AA	N	J	Capacitor 0.1 25V Ceramic
C8103	VCCCCZ1HH680JY	AB		J	Capacitor 68p 50V Ceramic
C8104	VCCCCZ1HH471JY	AA		J	Capacitor 470p 50V Ceramic
C8105	VCCCCZ1HH151JY	AB		J	Capacitor 150p 50V Ceramic
C8106	VCCCCZ1HH680JY	AB		J	Capacitor 68p 50V Ceramic
C8107	RC-KZA620WJZZY	AA	N	J	Capacitor 0.1 25V Ceramic
C8108	RC-KZA620WJZZY	AA	N	J	Capacitor 0.1 25V Ceramic
C8109	VCCCCZ1HH821JY	AA		J	Capacitor 820p 50V Ceramic
C8110	RC-KZA620WJZZY	AA	N	J	Capacitor 0.1 25V Ceramic
C8112	VCCCCZ1HH680JY	AB		J	Capacitor 68p 50V Ceramic
C8113	VCCCCZ1HH680JY	AB		J	Capacitor 68p 50V Ceramic
C8114	VCCCCZ1HH821JY	AA		J	Capacitor 820p 50V Ceramic
C8115	VCCCCZ1HH821JY	AA		J	Capacitor 820p 50V Ceramic
C8116	VCCCCZ1HH680JY	AB		J	Capacitor 68p 50V Ceramic
C8118	VCCCCZ1HH471JY	AA		J	Capacitor 470p 50V Ceramic
C8119	RC-KZA620WJZZY	AA	N	J	Capacitor 0.1 25V Ceramic
C8121	VCCCCZ1HH680JY	AB		J	Capacitor 68p 50V Ceramic
C8122	RC-KZA620WJZZY	AA	N	J	Capacitor 0.1 25V Ceramic
C8123	VCCCCZ1HH681JY	AA		J	Capacitor 680p 50V Ceramic

[4] DUNTKE449FM02 (MAIN Unit)

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
C8124	VCCCCZ1HH680JY	AB		J	Capacitor 68p 50V Ceramic
C8125	VCCCCZ1HH680JY	AB		J	Capacitor 68p 50V Ceramic
C8126	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C8127	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C8128	VCCCCZ1HH471JY	AA		J	Capacitor 470p 50V Ceramic
C8129	VCCCCZ1HH471JY	AA		J	Capacitor 470p 50V Ceramic
C8130	VCCCCZ1HH680JY	AB		J	Capacitor 68p 50V Ceramic
C8131	VCCCCZ1HH151JY	AB		J	Capacitor 150p 50V Ceramic
C8132	VCCCCZ1HH151JY	AB		J	Capacitor 150p 50V Ceramic
C8134	VCCCCZ1HH680JY	AB		J	Capacitor 68p 50V Ceramic
C8135	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C8141	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C8142	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C8201	RC-KZA114WJZZY	AB		J	Capacitor 1 25V Ceramic
C8203	RC-KZA110WJZZY	AD		J	Capacitor 10 25V Ceramic
C8204	RC-KZA620WJZZY	AA	N	J	Capacitor 0.1 25V Ceramic
C8206	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C8207	RC-KZA620WJZZY	AA	N	J	Capacitor 0.1 25V Ceramic
C8208	RC-KZA114WJZZY	AB		J	Capacitor 1 25V Ceramic
C8209	RC-KZA620WJZZY	AA	N	J	Capacitor 0.1 25V Ceramic
C8211	RC-KZA620WJZZY	AA	N	J	Capacitor 0.1 25V Ceramic
C8212	RC-KZA620WJZZY	AA	N	J	Capacitor 0.1 25V Ceramic
C8213	RC-KZA620WJZZY	AA	N	J	Capacitor 0.1 25V Ceramic
C8214	RC-KZA620WJZZY	AA	N	J	Capacitor 0.1 25V Ceramic
C8216	RC-KZA620WJZZY	AA	N	J	Capacitor 0.1 25V Ceramic
C8217	RC-KZA620WJZZY	AA	N	J	Capacitor 0.1 25V Ceramic
C8218	VCKYCY1HB104KY	AA		J	Capacitor 0.1 50V Ceramic
C8219	RC-KZA620WJZZY	AA	N	J	Capacitor 0.1 25V Ceramic
C8222	VCKYCZ1HB102KY	AB		J	Capacitor 1000p 50V Ceramic
C8223	RC-KZA114WJZZY	AB		J	Capacitor 1 25V Ceramic
C8224	RC-KZA114WJZZY	AB		J	Capacitor 1 25V Ceramic
C8225	RC-KZA114WJZZY	AB		J	Capacitor 1 25V Ceramic
C8226	RC-KZA114WJZZY	AB		J	Capacitor 1 25V Ceramic
C8227	RC-KZA114WJZZY	AB		J	Capacitor 1 25V Ceramic
C8229	VCKYCY1HB104KY	AA		J	Capacitor 0.1 50V Ceramic
C8230	RC-KZA110WJZZY	AD		J	Capacitor 10 25V Ceramic
C8231	RC-KZA110WJZZY	AD		J	Capacitor 10 25V Ceramic
C8401	VCKYCZ1EB682KY	AB		J	Capacitor 6800p 25V Ceramic
C8402	VCKYCY1EB104KY	AB		J	Capacitor 0.1 25V Ceramic
C8403	VCKYCZ1EB103KY	AA		J	Capacitor 0.01 25V Ceramic
C8406	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C8410	RC-KZA009WJZZY	AB		J	Capacitor 2.2 6.3V Ceramic
C8411	VCKYCZ1HB472KY	AA		J	Capacitor 4700p 50V Ceramic
C8412	VCCCCZ1HH680JY	AB		J	Capacitor 68p 50V Ceramic
C8413	RC-KZA114WJZZY	AB		J	Capacitor 1 25V Ceramic
C8416	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C8417	VCCCCZ1HH330JY	AB		J	Capacitor 33p 50V Ceramic
C8419	VCKYCY1EB104KY	AB		J	Capacitor 0.1 25V Ceramic
C8420	VCKYCY1EB334KY	AB		J	Capacitor 0.33 25V Ceramic
C8422	VCAAPC1CJ226MY	AG		J	Capacitor 22 16V Electrolytic
C8423	VCCCCZ1HH330JY	AB		J	Capacitor 33p 50V Ceramic
C8424	VCKYCY1EB104KY	AB		J	Capacitor 0.1 25V Ceramic
C8425	VCKYCY1HB104KY	AA		J	Capacitor 0.1 50V Ceramic
C8427	RC-KZA110WJZZY	AD		J	Capacitor 10 25V Ceramic
C8428	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C8429	RC-KZA620WJZZY	AA	N	J	Capacitor 0.1 25V Ceramic
C8430	RC-KZA114WJZZY	AB		J	Capacitor 1 25V Ceramic
C8431	VCKYCZ1EB103KY	AA		J	Capacitor 0.01 25V Ceramic
C8432	RC-KZA619WJZZY	AB		J	Capacitor 0.47 50V Ceramic
C8433	RC-KZA619WJZZY	AB		J	Capacitor 0.47 50V Ceramic
C8434	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C8435	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C8436	RC-KZA114WJZZY	AB		J	Capacitor 1 25V Ceramic
C8437	RC-KZA211WJZZY	AB		J	Capacitor 2.2 25V Ceramic
C8438	VCKYCY1EB104KY	AB		J	Capacitor 0.1 25V Ceramic
C8439	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C8440	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C8441	RC-KZA510WJPZY	AB		J	Capacitor 10 16V Ceramic
C8442	RC-KZA110WJZZY	AD		J	Capacitor 10 25V Ceramic
C8444	RC-KZA110WJZZY	AD		J	Capacitor 10 25V Ceramic
C8445	RC-KZA110WJZZY	AD		J	Capacitor 10 25V Ceramic
C8458	RC-KZA211WJZZY	AB		J	Capacitor 2.2 25V Ceramic
C8459	RC-KZA110WJZZY	AD		J	Capacitor 10 25V Ceramic
C8461	RC-KZA620WJZZY	AA	N	J	Capacitor 0.1 25V Ceramic
C8462	RC-KZA110WJZZY	AD		J	Capacitor 10 25V Ceramic
C8463	RC-KZA110WJZZY	AD		J	Capacitor 10 25V Ceramic
C8464	RC-KZA110WJZZY	AD		J	Capacitor 10 25V Ceramic
C8465	RC-KZA110WJZZY	AD		J	Capacitor 10 25V Ceramic
C8466	VCCCCZ1HH330JY	AB		J	Capacitor 33p 50V Ceramic
C8467	VCKYCY1EB334KY	AB		J	Capacitor 0.33 25V Ceramic
C8468	VCKYCY1EB473KY	AA		J	Capacitor 0.047 25V Ceramic
C8469	VCKYCZ1HB331KY	AA		J	Capacitor 330p 50V Ceramic
C8470	VCKYCZ1HB331KY	AA		J	Capacitor 330p 50V Ceramic
C8471	RC-KZA110WJZZY	AD		J	Capacitor 10 25V Ceramic
C8472	VCKYCZ1EB103KY	AA		J	Capacitor 0.01 25V Ceramic

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
[4] DUNTKE449FM02 (MAIN Unit)					
C8473	RC-KZA620WJZZY	AA	N	J	Capacitor 0.1 25V Ceramic
D1101	RH-EXA512WJZZY	AB		J	Zener Diode MAZ8039GHL
D1102	RH-EXA512WJZZY	AB		J	Zener Diode MAZ8039GHL
D1103	RH-EXA512WJZZY	AB		J	Zener Diode MAZ8039GHL
D1104	RH-EXA520WJZZY	AB		J	Zener Diode MAZ8051GML
D1105	RH-EXA512WJZZY	AB		J	Zener Diode MAZ8039GHL
D1106	RH-EXA512WJZZY	AB		J	Zener Diode MAZ8039GHL
D1107	RH-EXA512WJZZY	AB		J	Zener Diode MAZ8039GHL
D1109	RH-EXA520WJZZY	AB		J	Zener Diode MAZ8051GML
D1110	RH-EXA554WJZZY	AB		J	Zener Diode MAZ8150GML
D1112	RH-EXA512WJZZY	AB		J	Zener Diode MAZ8039GHL
D1113	RH-EXA520WJZZY	AB		J	Zener Diode MAZ8051GML
D1114	RH-EXA512WJZZY	AB		J	Zener Diode MAZ8039GHL
D1115	RH-EXA554WJZZY	AB		J	Zener Diode MAZ8150GML
D1116	RH-EXA550WJZZY	AB		J	Zener Diode MAZ8130GML
D1117	RH-EXA520WJZZY	AB		J	Zener Diode MAZ8051GML
D1118	RH-EXA535WJZZY	AM		J	Zener Diode MAZ8082GML
D1119	RH-EXA535WJZZY	AM		J	Zener Diode MAZ8082GML
D1120	RH-EXA535WJZZY	AM		J	Zener Diode MAZ8082GML
D1121	RH-EXA535WJZZY	AM		J	Zener Diode MAZ8082GML
D1201	VHD1SS226//-1Y	AC		J	Diode 1SS226(T5L F T)
D1202	VHD1SS226//-1Y	AC		J	Diode 1SS226(T5L F T)
D1203	RH-EXA523WJZZY	AB		J	Zener Diode MAZ8056GML
D1204	RH-EXA523WJZZY	AB		J	Zener Diode MAZ8056GML
D1205	RH-EXA523WJZZY	AB		J	Zener Diode MAZ8056GML
D1206	VHD1SS226//-1Y	AC		J	Diode 1SS226(T5L F T)
D1207	RH-EXA523WJZZY	AB		J	Zener Diode MAZ8056GML
D1208	VHDKDS184//-1Y	AB		J	Diode KDS184-RTK/P
D1209	RH-EXA523WJZZY	AB		J	Zener Diode MAZ8056GML
D1501	VHDMA3120WA-1Y	AD		J	Diode MAZ3120D0L
D1503	VHDMA3120WA-1Y	AD		J	Diode MAZ3120D0L
D1701	VHDKDS4148/-1Y	AA		J	Diode KDS4148U-RTK/P
D1702	VHDSMAB33L+-1Y	AC		J	Diode SMAB33L-RTK/P
D1705	VHDD1F60///-1Y	AC		J	Diode D1F60
D1725	VHD1SS390++-1Y	AB		J	Diode 1SS390TE61
D1726	VHDKDS4148/-1Y	AA		J	Diode KDS4148U-RTK/P
D1735	VHDSMAB33L+-1Y	AC		J	Diode SMAB33L-RTK/P
D1745	VHDSMAB33L+-1Y	AC		J	Diode SMAB33L-RTK/P
D1755	VHDKDS4148/-1Y	AA		J	Diode KDS4148U-RTK/P
D1756	VHDKDS4148/-1Y	AA		J	Diode KDS4148U-RTK/P
D1801	VHD1SS355//-1Y	AB		J	Diode 1SS355TE-17
D1802	RH-EXA526WJZZY	AB		J	Diode MAZ8062GML
D1803	VHD1SS355//-1Y	AB		J	Diode 1SS355TE-17
D1804	VHD1SS355//-1Y	AB		J	Diode 1SS355TE-17
D1805	RH-EXA514WJZZY	AB		J	Diode MAZ8043GML
D1904	VHDKDS4148/-1Y	AA		J	Diode KDS4148U-RTK/P
D1905	VHDKDS184//-1Y	AB		J	Diode KDS184-RTK/P
D1906	VHDKDS184//-1Y	AB		J	Diode KDS184-RTK/P
D1907	VHDKDS4148/-1Y	AA		J	Diode KDS4148U-RTK/P
D1908	VHDKDS4148/-1Y	AA		J	Diode KDS4148U-RTK/P
D1909	VHDRB520S30-1Y	AC		J	Diode RB520S-30TE61
D1923	VHDKDS4148/-1Y	AA		J	Diode KDS4148U-RTK/P
D2301	RH-EXA547WJZZY	AB		J	Diode MAZ8120GML
D4201	VHDKDS4148/-1Y	AA		J	Diode KDS4148U-RTK/P
D8101	VHDKDS184//-1Y	AB		J	Diode KDS184-RTK/P
D8401	VHDRB550EA+-1Y	AC		J	Diode RB550EATR
D8402	VHDRB550EA+-1Y	AC		J	Diode RB550EATR
D8403	VHDMA24D50+-1Y	AD		J	Diode MA24D5000B
D8405	VHDRB550EA+-1Y	AC		J	Diode RB550EATR
D8406	VHDRB160M30-1Y	AC		J	Diode RB160M-30TR
D8407	VHDRB160M30-1Y	AC		J	Diode RB160M-30TR
D8408	VHDMA3ZD12+-1Y	AC	N	J	Diode MA3ZD1200L
D8409	VHDRB160M30-1Y	AC		J	Diode RB160M-30TR
D8410	VHDD1F60///-1Y	AC		J	Diode D1F60
D8411	VHD1SS355//-1Y	AB		J	Diode 1SS355TE-17
FB201	RBLN-0210TAZZY	AB		J	Ferrite Core
FB1031	RBLN-A188WJZZY	AA		J	Balun BLN-A188WJ
FB1101	RBLN-0077TAZZY	AB		J	Balun BLN-0077TA
FB1102	RBLN-0077TAZZY	AB		J	Balun BLN-0077TA
FB1103	RBLN-0077TAZZY	AB		J	Balun BLN-0077TA
FB1104	RBLN-0077TAZZY	AB		J	Balun BLN-0077TA
FB1105	RBLN-0077TAZZY	AB		J	Balun BLN-0077TA
FB1106	RBLN-0077TAZZY	AB		J	Balun BLN-0077TA
FB1107	RBLN-0077TAZZY	AB		J	Balun BLN-0077TA
FB1108	RBLN-0077TAZZY	AB		J	Balun BLN-0077TA
FB1109	RBLN-0077TAZZY	AB		J	Balun BLN-0077TA
FB1110	RBLN-0077TAZZY	AB		J	Balun BLN-0077TA
FB1111	RBLN-0077TAZZY	AB		J	Balun BLN-0077TA
FB1112	RBLN-0077TAZZY	AB		J	Balun BLN-0077TA
FB1201	RBLN-A188WJZZY	AA		J	Balun BLN-A188WJ
FB1202	RBLN-0061TAZZY	AD		J	Balun BLN-0061TA
FB1203	RBLN-0061TAZZY	AD		J	Balun BLN-0061TA
FB1204	RBLN-0061TAZZY	AD		J	Balun BLN-0061TA
FB1205	RBLN-0061TAZZY	AD		J	Balun BLN-0061TA
FB1301	RBLN-0077TAZZY	AB		J	Balun BLN-0077TA

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
[4] DUNTKE449FM02 (MAIN Unit)					
FB1302	RBLN-0077TAZZY	AB		J	Balun BLN-0077TA
FB1303	RBLN-0077TAZZY	AB		J	Balun BLN-0077TA
FB1304	RBLN-0077TAZZY	AB		J	Balun BLN-0077TA
FB1305	RBLN-0077TAZZY	AB		J	Balun BLN-0077TA
FB1306	RBLN-0077TAZZY	AB		J	Balun BLN-0077TA
FB1309	RBLN-A188WJZZY	AA		J	Balun BLN-A188WJ
FB1401	RBLN-A188WJZZY	AA		J	Balun BLN-A188WJ
FB1402	RBLN-A188WJZZY	AA		J	Balun BLN-A188WJ
FB1501	RBLN-0061TAZZY	AD		J	Balun BLN-0061TA
FB1502	RBLN-0061TAZZY	AD		J	Balun BLN-0061TA
FB1701	RBLN-A303WJZZY	AB		J	Balun BLN-A303WJ
FB1702	RBLN-0207TAZZY	AB		J	Balun BLN-0207TA
FB1703	RBLN-0207TAZZY	AB		J	Balun BLN-0207TA
FB1735	RBLN-A303WJZZY	AB		J	Balun BLN-A303WJ
FB1745	RBLN-A303WJZZY	AB		J	Balun BLN-A303WJ
FB1801	RBLN-0207TAZZY	AB		J	Balun BLN-0207TA
FB1901	RBLN-A192WJZZY	AA		J	Ferrite Core
FB1902	RBLN-A192WJZZY	AA		J	Ferrite Core
FB1941	RBLN-A192WJZZY	AA		J	Ferrite Core
FB1951	RBLN-A192WJZZY	AA		J	Ferrite Core
FB1952	RBLN-A192WJZZY	AA		J	Ferrite Core
FB1953	RBLN-A192WJZZY	AA		J	Ferrite Core
FB1954	RBLN-A192WJZZY	AA		J	Ferrite Core
FB1955	RBLN-0210TAZZY	AB		J	Ferrite Core
FB1956	RBLN-A192WJZZY	AA		J	Ferrite Core
FB1957	RBLN-A192WJZZY	AA		J	Ferrite Core
FB2301	RBLN-0061TAZZY	AD		J	Balun BLN-0061TA
FB2302	RBLN-A192WJZZY	AA		J	Ferrite Core
FB2304	RBLN-0061TAZZY	AD		J	Balun BLN-0061TA
FB2305	RBLN-0061TAZZY	AD		J	Balun BLN-0061TA
FB2310	RBLN-A192WJZZY	AA		J	Ferrite Core
FB3001	RBLN-A188WJZZY	AA		J	Balun BLN-A188WJ
FB3002	RBLN-A192WJZZY	AA		J	Ferrite Core
FB3003	RBLN-A192WJZZY	AA		J	Ferrite Core
FB3004	RBLN-A192WJZZY	AA		J	Ferrite Core
FB3005	RBLN-A192WJZZY	AA		J	Ferrite Core
FB3006	RBLN-A192WJZZY	AA		J	Ferrite Core
FB3021	RBLN-A188WJZZY	AA		J	Balun BLN-A188WJ
FB3022	RBLN-A192WJZZY	AA		J	Ferrite Core
FB3035	RBLN-A192WJZZY	AA		J	Ferrite Core
FB3036	RBLN-A188WJZZY	AA		J	Balun BLN-A188WJ
FB3037	RBLN-A192WJZZY	AA		J	Ferrite Core
FB3038	RBLN-A192WJZZY	AA		J	Ferrite Core
FB3051	RBLN-A192WJZZY	AA		J	Ferrite Core
FB3052	RBLN-A192WJZZY	AA		J	Ferrite Core
FB3053	RBLN-A192WJZZY	AA		J	Ferrite Core
FB3054	RBLN-A192WJZZY	AA		J	Ferrite Core
FB3055	RBLN-A192WJZZY	AA		J	Ferrite Core
FB3071	RBLN-0061TAZZY	AD		J	Balun BLN-0061TA
FB3072	RBLN-0061TAZZY	AD		J	Balun BLN-0061TA
FB3073	RBLN-0061TAZZY	AD		J	Balun BLN-0061TA
FB4001	RBLN-A192WJZZY	AA		J	Ferrite Core
FB4002	RBLN-A192WJZZY	AA		J	Ferrite Core
FB4003	RBLN-0210TAZZY	AB		J	Ferrite Core
FB4004	RBLN-A192WJZZY	AA		J	Ferrite Core
FB4201	RBLN-A192WJZZY	AA		J	Ferrite Core
FB4202	RBLN-A192WJZZY	AA		J	Ferrite Core
FB4251	RBLN-A192WJZZY	AA		J	Ferrite Core
FB4401	RBLN-A192WJZZY	AA		J	Ferrite Core
FB4402	RBLN-A192WJZZY	AA		J	Ferrite Core
FB8101	RBLN-A188WJZZY	AA		J	Balun BLN-A188WJ
FB8102	RBLN-A188WJZZY	AA		J	Balun BLN-A188WJ
FB8103	RBLN-A188WJZZY	AA		J	Balun BLN-A188WJ
FB8104	RBLN-A188WJZZY	AA		J	Balun BLN-A188WJ
FB8105	RBLN-A188WJZZY	AA		J	Balun BLN-A188WJ
FB8106	RBLN-A188WJZZY	AA		J	Balun BLN-A188WJ
FL1101	RFiLN0017TAZZY	AC		J	Filter
FL1102	RFiLN0017TAZZY	AC		J	Filter
FL1103	RFiLN0017TAZZY	AC		J	Filter
FL1104	RFiLN0017TAZZY	AC		J	Filter
FL1105	RFiLN0017TAZZY	AC		J	Filter
FL1106	RFiLN0017TAZZY	AC		J	Filter
FL1107	RFiLN0017TAZZY	AC		J	Filter
FL1108	RFiLN0017TAZZY	AC		J	Filter
FL1109	RFiLN0017TAZZY	AC		J	Filter
FL1110	RFiLN0017TAZZY	AC		J	Filter
FL1201	RFiLN0003TAZZY	AD		J	Filter
FL1202	RFiLN0003TAZZY	AD		J	Filter
FL1203	RFiLN0003TAZZY	AD		J	Filter
FL8101	RFiLZA007WJZZY	AD		J	Filter
IC202	VHiPQ1M335M-1Y	AD		J	IC PQ1M335M2SPQ
IC203	VHiLV4053FT-1Y	AE		J	IC TC74LVX4053FT(EL)
IC204	VHiBH25FB1G-1Y	AD		J	IC BH25FBIWG-TR
IC205	VHiMM3271AN-1Y			J	IC MM3271ANRE
IC207	RH-iXB964WJZZQ			J	IC STV0362

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
[4] DUNTKE449FM02 (MAIN Unit)					
IC261	VSSSM6J51TU-1Y	AF		J	IC Transistor IC SSM6J51TU
IC1001	VHiNJM2234V-1Y	AE		J	IC NJM2234V(TE1)
IC1002	VHiNJM4558M-1Y	AD		J	IC NJM4558M-TE1
IC1101	VHiMM1506XN-1Y	AD		J	IC MM1506XNRE
IC1102	VHiMM1506XN-1Y	AD		J	IC MM1506XNRE
IC1201	RH-iXC206WJQZS			J	IC PC EDID
IC1301	VHiNJM2750M-1Y	AH		J	IC NJM2750M(TE2)
IC1401	VHiSM5309AV-1Y	AL		J	IC SM5309AV-G-ET
IC1501	VHiiSL83220-1Y	AQ		J	IC ISL83220ECVZ-T(S2702)
IC1502	VHiMM1507XN-1Y	AD		J	IC MM1507XNRE
IC1701	VHiPQ1M335M-1Y	AD		J	IC PQ1M335M2SPQ
IC1702	VHiLV5805M+-1Y	AG		J	IC LV5805M-TE-L-E
IC1703	VHiPST8444N-1Y	AC		J	IC IC-PST8444NR
IC1725	VHiPQ1R50//-1Y	AF		J	IC PQ1R50J0000H
IC1726	VHiPQ20WZ51-1Y	AF		J	IC PQ20WZ5UJ00H
IC1735	VHiLV5805M+-1Y	AG		J	IC LV5805M-TE-L-E
IC1745	VHiLV5805M+-1Y	AG		J	IC LV5805M-TE-L-E
IC1755	VHiPQ012GN1-1Y	AF		J	IC PQ012GN01ZPH
IC1756	VHiPQ1LA185-1Y	AD		J	IC PQ1LA185MSPQ
IC1902	RH-iXC448WJZZS			J	IC HDMI EDID
IC1922	RH-iXC447WJZZS			J	IC HDMI EDID
IC1941	VHiTVHC153T-1Y	AE		J	IC TC74VHC153FT(EL,M)
IC1951	VHiSii9025+-1Q	AX		J	IC SII9025CTU
IC2302	RH-iXC009WJZZQ	AU		J	IC 86FS49AUG-6NU2(JZ
IC2303	VHiPST8428N-1Y	AC		J	IC IC-PST8428NR
IC2601	VHiPST8428N-1Y	AC		J	IC IC-PST8428NR
IC2701	VHiYDA147SZ-1Y	AM		J	IC YDA147-SZE2
IC3001	RH-iXC354WJZZQ	BK	N	J	IC VCT7993P-FA-A1-H000
IC3002	VHiPST8415N-1Y	AC		J	IC IC-PST8415NR
IC3051	VHiBR24S64M-1Y	AF		J	IC BR24S64FVM-WTR
IC4001	RH-iXC243WJZZQ			J	IC STI5105ALC
IC4003	VHiPST8428N-1Y	AC		J	IC IC-PST8428NR
IC4004	VHiLV4052FT-1Y	AF		J	IC TC74LVX4052FT(EL,M)
IC4005	VHiLM833D++-1Y	AE		J	IC LM833DT
IC4201	RH-iXB765WJQZQ	AW		J	IC K4H561638H-UCB3
IC4202	VHiPQ070XNA-1Y	AE		J	IC PQ070XNA1ZPH
IC4251	RH-iXC361WJZZQ		N	J	IC M29W160ET70N6E
IC4252	VHiBR24S64M-1Y	AF		J	IC BR24S64FVM-WTR
IC4401	VHiLCX245FT-1Y	AD		J	IC TC74LCX245FT(EKJ)
IC4402	VHiLCX126FT-1Y	AD		J	IC TC74LCX126FT(EL,K)
IC4403	VHiAHC1G04W-1Y	AC		J	IC 74AHC1G04GW,125
IC4404	VHiLCX16244-1Y		N	J	IC TC74LCX16244(EL,F)
IC4405	VHiLCX16244-1Y		N	J	IC TC74LCX16244(EL,F)
IC4407	VHiTC7SH32U1EY	AC		J	IC TC7SH32FU(TE85L,JF)
IC4409	VHiAHC1G04W-1Y	AC		J	IC 74AHC1G04GW,125
IC4410	VHiAOZ1320C-1Y	AE		J	IC AOZ1320CI-04
IC8101	RH-iXC539WJZZS			J	IC M24256-BWMN6TP
IC8102	VHiT7WU04FK-1Y	AD		J	IC T7WU04FK
IC8103	VHiT3Z18AFG-1Q	BA		J	IC T3Z18AFG-0003(O2)
IC8201	VHiBD8143MU-1Y	AM		J	IC BD8143MUV-E2
IC8202	VHiBU55041+-1Y	AF		J	IC BU55041HFN-TR-TR
IC8402	VHiBD8162EK-1Q	AQ		J	IC VHIBD8162EK-1Q
J1301	QJAKJ0008GEZZ	AD		J	Jack
J1302	QJAKJ0008GEZZ	AD		J	Jack
J1303	QJAKFA061WJZZ	AE		J	Jack
J1304	QJAKFA061WJZZ	AE		J	Jack
J1401	QJAKGA131WJZZ	AG		J	Jack
L203	VPCNN2R2JR77NY	AB		J	Coil Peaking 2.2µH
L204	VPCNN2R2JR77NY	AB		J	Coil Peaking 2.2µH
L205	VPCNN2R2JR77NY	AB		J	Coil Peaking 2.2µH
L206	VPCNN2R2JR77NY	AB		J	Coil Peaking 2.2µH
L207	VPCNN2R2JR77NY	AB		J	Coil Peaking 2.2µH
L263	VPCNN120J1R9NY	AB		J	Coil Peaking 12µH
L1031	VPD9M100J1R7NY	AC		J	Coil Peaking 10µH
L1101	VPCNN120J1R9NY	AB		J	Coil Peaking 12µH
L1701	RCiLPA964WJZZY	AD	N	J	Coil 10u
L1735	RCiLPA085WJZZY	AD		J	Coil
L1745	RCiLPA964WJZZY	AD	N	J	Coil 10u
L2601	RCiLFA279WJZZY	AC		J	Coil
L2602	RCiLFA279WJZZY	AC		J	Coil
L2603	RCiLFA279WJZZY	AC		J	Coil
L2604	RCiLFA279WJZZY	AC		J	Coil
L2605	RCiLFA279WJZZY	AC		J	Coil
L2606	RCiLFA279WJZZY	AC		J	Coil
L2701	RCiLPA899WJZZY	AC		J	Coil Peaking 22µH
L2702	RCiLPA899WJZZY	AC		J	Coil Peaking 22µH
L2703	RCiLPA899WJZZY	AC		J	Coil Peaking 22µH
L2704	RCiLPA899WJZZY	AC		J	Coil Peaking 22µH
L8101	RCiLFA122WJZZY	AD		J	Coil
L8102	RCiLFA122WJZZY	AD		J	Coil
L8103	RCiLFA122WJZZY	AD		J	Coil
L8104	RCiLFA122WJZZY	AD		J	Coil
L8105	RCiLFA122WJZZY	AD		J	Coil
L8106	RCiLFA122WJZZY	AD		J	Coil
L8107	RCiLFA122WJZZY	AD		J	Coil

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
[4] DUNTKE449FM02 (MAIN Unit)					
L8108	RCiLFA122WJZZY	AD		J	Coil
L8109	RCiLFA122WJZZY	AD		J	Coil
L8110	RCiLFA122WJZZY	AD		J	Coil
L8111	RCiLFA122WJZZY	AD		J	Coil
L8112	RCiLFA122WJZZY	AD		J	Coil
L8113	RCiLFA275WJZZY	AC		J	Coil
L8114	RCiLFA275WJZZY	AC		J	Coil
L8401	RCiLPA962WJZZY	AC	N	J	Coil 4.7u
L8402	RCiLPA964WJZZY	AD	N	J	Coil 10u
L8403	RCiLPA964WJZZY	AD	N	J	Coil 10u
LUG1701	QLUGHA006WJZZY	AC		J	Lug
LUG1702	QLUGHA006WJZZY	AC		J	Lug
LUG1703	QLUGHA006WJZZY	AC		J	Lug
LUG1704	QLUGHA006WJZZY	AC		J	Lug
LUG1705	QLUGHA006WJZZY	AC		J	Lug
LUG1706	QLUGHA006WJZZY	AC		J	Lug
P1001	QCNCMA012WJZZ	AD		J	Connector 15Pin
P1701	QPLGNA168WJZZY	AF		J	Plug 12Pin(PD)
P2301	QPLGNA325WJZZY	AC		J	Plug 5Pin (RA)
P2302	QPLGNA329WJZZY	AD		J	Plug 9Pin(LB)
P2701	QPLGNA160WJZZY	AD		J	Plug 4Pin(SP)
P3071	QPLGNA324WJZZY	AC		J	Plug 4Pin(KM)
P3081	QPLGN0567FJZZY	AD		J	Plug 5Pin
P4001	QPLGN0463TAZZY	AC		J	Plug, 4Pin(RS)
P4401	QCNCMA313WJSA			J	Plug
P8101	QPLGN0663TAZZY	AD		J	Plug 6pin
Q202	VSRN4904///-1Y	AB		J	Transistor RN4904
Q203	VS2SC3928AR-1Y	AB		J	Transistor 2SC3928A-T112-1R
Q262	VSRN4904///-1Y	AB		J	Transistor RN4904
Q1001	VSiMH23T110-1Y	AC		J	Transister IMH23T110
Q1031	VS2SC3928AR-1Y	AB		J	Transistor 2SC3928A-T112-1R
Q1101	VSiMH23T110-1Y	AC		J	Transister IMH23T110
Q1102	VSiMH23T110-1Y	AC		J	Transister IMH23T110
Q1105	VS2SA1530AR-1Y	AB		J	Transistor 2SA1530A-T112-1R
Q1106	VS2SA1530AR-1Y	AB		J	Transistor 2SA1530A-T112-1R
Q1107	VS2SA1530AR-1Y	AB		J	Transistor 2SA1530A-T112-1R
Q1108	VS2SA1530AR-1Y	AB		J	Transistor 2SA1530A-T112-1R
Q1301	VS2SA1530AR-1Y	AB		J	Transistor 2SA1530A-T112-1R
Q1302	VS2SA1530AR-1Y	AB		J	Transistor 2SA1530A-T112-1R
Q1303	VSiMH23T110-1Y	AC		J	Transister IMH23T110
Q1501	VSSM3K7002F-1Y	AC		J	Transister SSM3K7002F(5LTST,F
Q1801	VSRDTC144EE-1Y	AA		J	Transister PDTC144EE,115
Q1802	VSDTA124EKA-1Y	AB		J	Transistor DTA124EKAT146
Q1901	VSRDTC144EE-1Y	AA		J	Transister PDTC144EE,115
Q1902	VSRDTC144EE-1Y	AA		J	Transister PDTC144EE,115
Q1903	VSSSM3K15F+-1Y		N	J	Transister SSM3K15F
Q1904	VSSSM3K15F+-1Y		N	J	Transister SSM3K15F
Q1905	VSRN4904///-1Y	AB		J	Transistor RN4904
Q1906	VSRDTC144EE-1Y	AA		J	Transister PDTC144EE,115
Q1921	VSRDTC144EE-1Y	AA		J	Transister PDTC144EE,115
Q1922	VSRDTC144EE-1Y	AA		J	Transister PDTC144EE,115
Q1923	VSSSM3K15F+-1Y		N	J	Transister SSM3K15F
Q1924	VSSSM3K15F+-1Y		N	J	Transister SSM3K15F
Q1925	VSRN4904///-1Y	AB		J	Transistor RN4904
Q2701	VSDTC614TK+-1Y	AB		J	Transistor DTC614TKT146
Q3051	VSSM3K7002F-1Y	AC		J	Transister SSM3K7002F(5LTST,F
Q3052	VSSM3K7002F-1Y	AC		J	Transister SSM3K7002F(5LTST,F
Q4001	VS2SC3928AR-1Y	AB		J	Transistor 2SC3928A-T112-1R
Q4002	VS2SC3928AR-1Y	AB		J	Transistor 2SC3928A-T112-1R
Q4403	VS2SC3928AR-1Y	AB		J	Transistor 2SC3928A-T112-1R
Q8401	VSEMZ1+++++-1Y	AC		J	Transister EMZ1T2R
Q8402	VSDTC114EE/-1Y	AB		J	Transistor DTC114EETL
Q8403	VSTPCP8602+-1Y	AD		J	Transister VSTPCP8602+-1Y
Q8404	VS2SA1530AR-1Y	AB		J	Transistor 2SA1530A-T112-1R
Q8405	VSTPCP8505+-1Y	AD		J	Transister VSTPCP8505+-1Y
Q8408	VS2SD1767++-1Y	AD		J	Transister 2SD1767T100
Q8410	VSRK7002A++-1Y	AB		J	Transister RK7002AT116
Q8450	VSRSS050P03-1Y	AG		J	Transister RSS050P03TB
R204	VRS-CZ1JF000JY	AA		J	Resistor 0 1/16W Metal Oxide
R206	VRK-SA1JF220JY			J	Resistor 22 1/16W Metal Composition
R209	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R211	VRS-CZ1JF392JY	AA		J	Resistor 3.9k 1/16W Metal Oxide
R212	VRS-CZ1JF151JY	AA		J	Resistor 150 1/16W Metal Oxide
R213	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R214	VRS-CZ1JF331JY	AA		J	Resistor 330 1/16W Metal Oxide
R218	VRS-CZ1JF151JY	AA		J	Resistor 150 1/16W Metal Oxide
R222	VRK-SA1JF472JY	AA		J	Resistor 4.7k 1/16W Metal Composition
R223	VRK-SA1JF220JY			J	Resistor 22 1/16W Metal Composition
R226	VRS-CZ1JF561JY	AA		J	Resistor 560 1/16W Metal Oxide
R227	VRS-CZ1JF561JY	AA		J	Resistor 560 1/16W Metal Oxide
R228	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R229	VRS-CZ1JF181JY	AA		J	Resistor 180 1/16W Metal Oxide
R230	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R231	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R232	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide

[4] DUNTKE449FM02 (MAIN Unit)

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
R233	VRK-SA1JF220JY			J	Resistor 22 1/16W Metal Composition
R234	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R236	VRS-CZ1JF470JY	AA		J	Resistor 47 1/16W Metal Oxide
R237	VRS-CZ1JF470JY	AA		J	Resistor 47 1/16W Metal Oxide
R238	VRS-CZ1JF470JY	AA		J	Resistor 47 1/16W Metal Oxide
R239	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R240	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R283	VRS-CZ1JF332JY	AA		J	Resistor 3.3k 1/16W Metal Oxide
R1006	VRS-CZ1JF682JY	AA		J	Resistor 6.8k 1/16W Metal Oxide
R1010	VRS-CZ1JF392JY	AA		J	Resistor 3.9k 1/16W Metal Oxide
R1011	VRS-CZ1JF101JY	AA		J	Resistor 100 1/16W Metal Oxide
R1012	VRS-TQ2EF560JY			J	Resistor 56 1/4W Metal Oxide
R1013	VRS-TQ2EF560JY			J	Resistor 56 1/4W Metal Oxide
R1014	VRK-SA1JF182JY	AC		J	Resistor 1.8k 1/16W Metal Composition
R1015	VRS-TW2HF820JY	AB		J	Resistor 82 1/2W Metal Oxide
R1016	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R1017	VRS-CZ1JF101JY	AA		J	Resistor 100 1/16W Metal Oxide
R1018	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R1019	VRS-CZ1JF122JY	AA		J	Resistor 1.2k 1/16W Metal Oxide
R1020	VRS-CZ1JF122JY	AA		J	Resistor 1.2k 1/16W Metal Oxide
R1021	VRK-SA1JF103JY	AB		J	Resistor 10k 1/16W Metal Composition
R1022	VRK-SA1JF103JY	AB		J	Resistor 10k 1/16W Metal Composition
R1023	VRK-SA1JF103JY	AB		J	Resistor 10k 1/16W Metal Composition
R1031	VRS-CZ1JF331FY	AA		J	Resistor 330 1/16W Metal Oxide
R1032	VRS-CZ1JF331FY	AA		J	Resistor 330 1/16W Metal Oxide
R1033	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R1034	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R1035	VRS-CZ1JF330FY	AA		J	Resistor 33 1/16W Metal Oxide
R1036	VRS-CZ1JF161FY			J	Resistor 160 1/16W Metal Oxide
R1101	VRS-CZ1JF153FY	AA		J	Resistor 15k 1/16W Metal Oxide
R1102	VRS-CZ1JF393FY	AA		J	Resistor 39k 1/16W Metal Oxide
R1103	VRS-CZ1JF153FY	AA		J	Resistor 15k 1/16W Metal Oxide
R1107	VRS-TQ2EF750JY	AA		J	Resistor 75 1/4W Metal Oxide
R1108	VRS-TQ2EF680JY	AA		J	Resistor 68 1/4W Metal Oxide
R1109	VRS-TQ2EF101JY	AA		J	Resistor 100 1/4W Metal Oxide
R1110	VRS-TQ2EF750JY	AA		J	Resistor 75 1/4W Metal Oxide
R1111	VRS-CZ1JF393FY	AA		J	Resistor 39k 1/16W Metal Oxide
R1112	VRS-TQ2EF750JY	AA		J	Resistor 75 1/4W Metal Oxide
R1113	VRS-TQ2EF680JY	AA		J	Resistor 68 1/4W Metal Oxide
R1117	VRS-TQ2EF750JY	AA		J	Resistor 75 1/4W Metal Oxide
R1118	VRS-TQ2EF750JY	AA		J	Resistor 75 1/4W Metal Oxide
R1121	VRS-CY1JF000JY	AA		J	Resistor 0 1/16W Metal Oxide
R1122	VRS-TQ2EF750JY	AA		J	Resistor 75 1/4W Metal Oxide
R1123	VRS-TQ2EF750JY	AA		J	Resistor 75 1/4W Metal Oxide
R1124	VRS-TQ2EF750JY	AA		J	Resistor 75 1/4W Metal Oxide
R1125	VRS-TQ2EF101JY	AA		J	Resistor 100 1/4W Metal Oxide
R1126	VRS-TQ2EF750JY	AA		J	Resistor 75 1/4W Metal Oxide
R1127	VRS-TQ2EF750JY	AA		J	Resistor 75 1/4W Metal Oxide
R1128	VRS-CY1JF000JY	AA		J	Resistor 0 1/16W Metal Oxide
R1129	VRS-CY1JF000JY	AA		J	Resistor 0 1/16W Metal Oxide
R1130	VRS-CZ1JF221JY	AA		J	Resistor 220 1/16W Metal Oxide
R1131	VRS-TV1JD221JY	AA		J	Resistor 220 1/16W Metal Oxide
R1132	VRS-TV1JD221JY	AA		J	Resistor 220 1/16W Metal Oxide
R1133	VRS-CY1JF000JY	AA		J	Resistor 0 1/16W Metal Oxide
R1134	VRS-CZ1JF104JY	AA		J	Resistor 100k 1/16W Metal Oxide
R1135	VRS-CZ1JF104JY	AA		J	Resistor 100k 1/16W Metal Oxide
R1136	VRS-TV1JD221JY	AA		J	Resistor 220 1/16W Metal Oxide
R1137	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R1138	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R1139	VRS-TV1JD221JY	AA		J	Resistor 220 1/16W Metal Oxide
R1142	VRS-CZ1JF104JY	AA		J	Resistor 100k 1/16W Metal Oxide
R1143	VRS-CZ1JF104JY	AA		J	Resistor 100k 1/16W Metal Oxide
R1144	VRK-SA1JF101JY	AC		J	Resistor 100 1/16W Metal Composition
R1145	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R1146	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R1147	VRK-SA1JF101JY	AC		J	Resistor 100 1/16W Metal Composition
R1148	VRS-CZ1JF104JY	AA		J	Resistor 100k 1/16W Metal Oxide
R1149	VRS-CZ1JF104JY	AA		J	Resistor 100k 1/16W Metal Oxide
R1150	VRS-CZ1JF564JY	AB		J	Resistor 560k 1/16W Metal Oxide
R1151	VRS-CZ1JF564JY	AB		J	Resistor 560k 1/16W Metal Oxide
R1152	VRK-SA1JF331JY			J	Resistor 330 1/16W Metal Composition
R1153	VRK-SA1JF331JY			J	Resistor 330 1/16W Metal Composition
R1154	VRS-CZ1JF564JY	AB		J	Resistor 560k 1/16W Metal Oxide
R1155	VRS-CZ1JF564JY	AB		J	Resistor 560k 1/16W Metal Oxide
R1156	VRK-SA1JF272JY			J	Resistor 2.7k 1/16W Metal Composition
R1157	VRK-SA1JF272JY			J	Resistor 2.7k 1/16W Metal Composition
R1201	VRS-TQ2EF750JY	AA		J	Resistor 75 1/4W Metal Oxide
R1202	VRS-TQ2EF750JY	AA		J	Resistor 75 1/4W Metal Oxide
R1203	VRS-TQ2EF750JY	AA		J	Resistor 75 1/4W Metal Oxide
R1204	VRS-CZ1JF221JY	AA		J	Resistor 220 1/16W Metal Oxide
R1205	VRS-CZ1JF221JY	AA		J	Resistor 220 1/16W Metal Oxide
R1206	VRS-CZ1JF473JY	AA		J	Resistor 47k 1/16W Metal Oxide
R1207	VRS-CZ1JF473JY	AA		J	Resistor 47k 1/16W Metal Oxide
R1208	VRK-SB1FF101JY	AA		J	Resistor 100 1/32W Metal Composition
R1209	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
[4] DUNTKE449FM02 (MAIN Unit)					
R1210	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R1301	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R1302	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R1303	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R1304	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R1305	VRS-CZ1JF104JY	AA		J	Resistor 100k 1/16W Metal Oxide
R1306	VRS-CZ1JF104JY	AA		J	Resistor 100k 1/16W Metal Oxide
R1307	VRS-CZ1JF104JY	AA		J	Resistor 100k 1/16W Metal Oxide
R1308	VRS-CZ1JF104JY	AA		J	Resistor 100k 1/16W Metal Oxide
R1309	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R1310	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R1311	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R1312	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R1313	VRS-CZ1JF104JY	AA		J	Resistor 100k 1/16W Metal Oxide
R1314	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R1315	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R1316	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R1317	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R1318	VRS-CZ1JF104JY	AA		J	Resistor 100k 1/16W Metal Oxide
R1319	VRS-CZ1JF104JY	AA		J	Resistor 100k 1/16W Metal Oxide
R1320	VRS-CZ1JF221JY	AA		J	Resistor 220 1/16W Metal Oxide
R1321	VRS-CZ1JF561JY	AA		J	Resistor 560 1/16W Metal Oxide
R1322	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R1323	VRS-CZ1JF104JY	AA		J	Resistor 100k 1/16W Metal Oxide
R1324	VRS-CZ1JF221JY	AA		J	Resistor 220 1/16W Metal Oxide
R1325	VRS-CZ1JF561JY	AA		J	Resistor 560 1/16W Metal Oxide
R1326	VRS-CZ1JF564JY	AB		J	Resistor 560k 1/16W Metal Oxide
R1327	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R1328	VRS-CZ1JF564JY	AB		J	Resistor 560k 1/16W Metal Oxide
R1329	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R1330	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R1331	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R1332	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R1401	VRK-SA1JF220JY			J	Resistor 22 1/16W Metal Composition
R1402	VRS-TQ2EF750JY	AA		J	Resistor 75 1/4W Metal Oxide
R1403	VRS-TQ2EF750JY	AA		J	Resistor 75 1/4W Metal Oxide
R1404	VRS-TQ2EF750JY	AA		J	Resistor 75 1/4W Metal Oxide
R1405	VRS-CZ1JF182FY	AA		J	Resistor 1.8k 1/16W Metal Oxide
R1409	VRS-CZ1JF161FY			J	Resistor 160 1/16W Metal Oxide
R1410	VRS-CZ1JF161FY			J	Resistor 160 1/16W Metal Oxide
R1411	VRS-CZ1JF161FY			J	Resistor 160 1/16W Metal Oxide
R1502	VRS-TV1JD101JY	AA		J	Resistor 100 1/10W Metal Oxide
R1503	VRS-TV1JD101JY	AA		J	Resistor 100 1/10W Metal Oxide
R1504	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R1505	VRS-CZ1JF101JY	AA		J	Resistor 100 1/16W Metal Oxide
R1506	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R1507	VRS-CZ1JF223JY	AA		J	Resistor 22k 1/16W Metal Oxide
R1508	VRS-CZ1JF101JY	AA		J	Resistor 100 1/16W Metal Oxide
R1701	VRS-CZ1JF153FY	AA		J	Resistor 15k 1/16W Metal Oxide
R1702	VRS-CZ1JF823FY	AA		J	Resistor 82k 1/16W Metal Oxide
R1703	VRS-CZ1JF103FY	AB		J	Resistor 10k 1/16W Metal Oxide
R1705	VRS-CZ1JF101JY	AA		J	Resistor 100 1/16W Metal Oxide
R1706	VRS-TW2HF1R0JY	AA		J	Resistor 1 1/2W Metal Oxide
R1707	VRS-CZ1JF473JY	AA		J	Resistor 47k 1/16W Metal Oxide
R1708	VRS-CZ1JF392JY	AA		J	Resistor 3.9k 1/16W Metal Oxide
R1709	VRS-CZ1JF101JY	AA		J	Resistor 100 1/16W Metal Oxide
R1710	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R1711	VRS-TW2HF1R0JY	AA		J	Resistor 1 1/2W Metal Oxide
R1712	VRS-TW2HF1R0JY	AA		J	Resistor 1 1/2W Metal Oxide
R1714	VRS-CZ1JF101JY	AA		J	Resistor 100 1/16W Metal Oxide
R1719	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R1725	VRS-CZ1JF222FY	AA		J	Resistor 2.2k 1/16W Metal Oxide
R1726	VRS-TW2HF3R3JY	AA		J	Resistor 3.3 1/2W Metal Oxide
R1727	VRS-TW2HF3R3JY	AA		J	Resistor 3.3 1/2W Metal Oxide
R1728	VRS-CZ1JF202FY	AA		J	Resistor 2k 1/16W Metal Oxide
R1729	VRS-CZ1JF101JY	AA		J	Resistor 100 1/16W Metal Oxide
R1730	VRS-CZ1JF202FY	AA		J	Resistor 2k 1/16W Metal Oxide
R1735	VRS-CZ1JF154FY	AA		J	Resistor 150k 1/16W Metal Oxide
R1736	VRS-CZ1JF823FY	AA		J	Resistor 82k 1/16W Metal Oxide
R1737	VRS-CZ1JF103FY	AB		J	Resistor 10k 1/16W Metal Oxide
R1738	VRS-CZ1JF101JY	AA		J	Resistor 100 1/16W Metal Oxide
R1740	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R1741	VRS-TW2HF1R0JY	AA		J	Resistor 1 1/2W Metal Oxide
R1742	VRS-TW2HF1R0JY	AA		J	Resistor 1 1/2W Metal Oxide
R1743	VRS-CZ1JF101JY	AA		J	Resistor 100 1/16W Metal Oxide
R1745	VRS-CZ1JF154FY	AA		J	Resistor 150k 1/16W Metal Oxide
R1746	VRS-CZ1JF393FY	AA		J	Resistor 39k 1/16W Metal Oxide
R1747	VRS-CZ1JF103FY	AB		J	Resistor 10k 1/16W Metal Oxide
R1748	VRS-CZ1JF101JY	AA		J	Resistor 100 1/16W Metal Oxide
R1750	VRS-CZ1JF562JY	AA		J	Resistor 5.6k 1/16W Metal Oxide
R1751	VRS-TW2HF1R0JY	AA		J	Resistor 1 1/2W Metal Oxide
R1752	VRS-TW2HF1R0JY	AA		J	Resistor 1 1/2W Metal Oxide
R1753	VRS-TW2HF1R0JY	AA		J	Resistor 1 1/2W Metal Oxide
R1754	VRS-CZ1JF101JY	AA		J	Resistor 100 1/16W Metal Oxide
R1755	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide

[4] DUNTKE449FM02 (MAIN Unit)

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
R1756	VRS-TW2HF2R2JY	AA		J	Resistor 2.2 1/2W Metal Oxide
R1757	VRS-TW2HF2R2JY	AA		J	Resistor 2.2 1/2W Metal Oxide
R1758	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R1801	VRS-CZ1JF472JY	AA		J	Resistor 4.7k 1/16W Metal Oxide
R1802	VRS-CZ1JF101JY	AA		J	Resistor 100 1/16W Metal Oxide
R1803	VRS-CZ1JF101JY	AA		J	Resistor 100 1/16W Metal Oxide
R1901	VRS-CZ1JF000JY	AA		J	Resistor 0 1/16W Metal Oxide
R1903	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R1904	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R1905	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R1907	VRK-SA1JF474JY			J	Resistor 470k 1/16W Metal Composition
R1909	VRK-SA1JF473JY	AC		J	Resistor 47k 1/16W Metal Composition
R1911	VRS-CZ1JF273JY	AA		J	Resistor 27k 1/16W Metal Oxide
R1912	VRK-SA1JF100JY	AB		J	Resistor 10 1/16W Metal Composition
R1915	VRS-CZ1JF473JY	AA		J	Resistor 47k 1/16W Metal Oxide
R1921	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R1923	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R1924	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R1926	VRK-SA1JF474JY			J	Resistor 470k 1/16W Metal Composition
R1928	VRK-SA1JF473JY	AC		J	Resistor 47k 1/16W Metal Composition
R1930	VRK-SA1JF100JY	AB		J	Resistor 10 1/16W Metal Composition
R1933	VRS-CZ1JF473JY	AA		J	Resistor 47k 1/16W Metal Oxide
R1951	VRS-CZ1JF470JY	AA		J	Resistor 47 1/16W Metal Oxide
R1952	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R1953	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R1954	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R1955	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R1956	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R1957	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R1958	VRS-CZ1JF472JY	AA		J	Resistor 4.7k 1/16W Metal Oxide
R1959	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R1960	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R1961	VRS-CZ1JF223JY	AA		J	Resistor 22k 1/16W Metal Oxide
R1962	VRS-CZ1JF472JY	AA		J	Resistor 4.7k 1/16W Metal Oxide
R1965	VRS-CZ1JF105JY	AA		J	Resistor 1M 1/16W Metal Oxide
R1966	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R1967	VRS-CZ1JF330JY	AA		J	Resistor 33 1/16W Metal Oxide
R1968	VRS-CZ1JF220JY	AA		J	Resistor 22 1/16W Metal Oxide
R1969	VRS-CZ1JF220JY	AA		J	Resistor 22 1/16W Metal Oxide
R1970	VRS-CZ1JF220JY	AA		J	Resistor 22 1/16W Metal Oxide
R1971	VRK-SA1JF220JY			J	Resistor 22 1/16W Metal Composition
R1973	VRS-CZ1JF330JY	AA		J	Resistor 33 1/16W Metal Oxide
R2302	VRS-CZ1JF101JY	AA		J	Resistor 100 1/16W Metal Oxide
R2303	VRK-SB1FF472JY	AA		J	Resistor 4.7k 1/32W Metal Composition
R2304	VRK-SB1FF472JY	AA		J	Resistor 4.7k 1/32W Metal Composition
R2305	VRS-CZ1JF101JY	AA		J	Resistor 100 1/16W Metal Oxide
R2306	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R2307	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R2312	VRS-CZ1JF472JY	AA		J	Resistor 4.7k 1/16W Metal Oxide
R2313	VRS-CZ1JF105JY	AA		J	Resistor 1M 1/16W Metal Oxide
R2317	VRK-SA1JF220JY			J	Resistor 22 1/16W Metal Composition
R2324	VRS-CZ1JF331JY	AA		J	Resistor 330 1/16W Metal Oxide
R2325	VRS-CZ1JF104JY	AA		J	Resistor 100k 1/16W Metal Oxide
R2327	VRS-CZ1JF472JY	AA		J	Resistor 4.7k 1/16W Metal Oxide
R2328	VRK-SA1JF103JY	AB		J	Resistor 10k 1/16W Metal Composition
R2329	VRS-CZ1JF101JY	AA		J	Resistor 100 1/16W Metal Oxide
R2336	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R2603	VRS-CZ1JF474JY	AA		J	Resistor 470k 1/16W Metal Oxide
R2612	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R2614	VRS-CZ1JF220JY	AA		J	Resistor 22 1/16W Metal Oxide
R2615	VRS-CZ1JF220JY	AA		J	Resistor 22 1/16W Metal Oxide
R2706	VRK-SA1JF182JY	AC		J	Resistor 1.8k 1/16W Metal Composition
R2711	VRK-SA1JF103JY	AB		J	Resistor 10k 1/16W Metal Composition
R2715	VRS-CZ1JF274FY	AA		J	Resistor 270k 1/16W Metal Oxide
R2716	VRS-CZ1JF104FY	AB		J	Resistor 100k 1/16W Metal Oxide
R2718	VRS-CZ1JF000JY	AA		J	Resistor 0 1/16W Metal Oxide
R2719	VRS-CZ1JF000JY	AA		J	Resistor 0 1/16W Metal Oxide
R2720	VRS-CZ1JF000JY	AA		J	Resistor 0 1/16W Metal Oxide
R2722	VRS-CZ1JF000JY	AA		J	Resistor 0 1/16W Metal Oxide
R2723	VRK-SB1FF224JY			J	Resistor 220k 1/32W Metal Composition
R2728	VRS-CZ1JF224JY	AA		J	Resistor 220k 1/16W Metal Oxide
R2729	VRS-CZ1JF474JY	AA		J	Resistor 470k 1/16W Metal Oxide
R2730	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R2731	VRS-CZ1JF562JY	AA		J	Resistor 5.6k 1/16W Metal Oxide
R3001	VRS-CZ1JF472JY	AA		J	Resistor 4.7k 1/16W Metal Oxide
R3003	VRS-CZ1JF000JY	AA		J	Resistor 0 1/16W Metal Oxide
R3004	VRS-CZ1JF622JY	AA		J	Resistor 6.2k 1/16W Metal Oxide
R3007	VRS-CZ1JF472JY	AA		J	Resistor 4.7k 1/16W Metal Oxide
R3054	VRK-SA1JF220JY			J	Resistor 22 1/16W Metal Composition
R3056	VRK-SA1JF472JY	AA		J	Resistor 4.7k 1/16W Metal Composition
R3071	VRS-CZ1JF333FY	AA		J	Resistor 33k 1/16W Metal Oxide
R3072	VRS-CZ1JF333FY	AA		J	Resistor 33k 1/16W Metal Oxide
R3073	VRS-CZ1JF103FY	AB		J	Resistor 10k 1/16W Metal Oxide
R3074	VRS-CZ1JF102FY	AA		J	Resistor 1k 1/16W Metal Oxide
R3075	VRS-CZ1JF102FY	AA		J	Resistor 1k 1/16W Metal Oxide

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
[4] DUNTKE449FM02 (MAIN Unit)					
R3076	VRS-CZ1JF102FY	AA		J	Resistor 1k 1/16W Metal Oxide
R3081	VRK-SA1JF220JY			J	Resistor 22 1/16W Metal Composition
R4002	VRS-CZ1JF103FY	AB		J	Resistor 10k 1/16W Metal Oxide
R4003	VRS-CZ1JF000JY	AA		J	Resistor 0 1/16W Metal Oxide
R4004	VRS-CZ1JF000JY	AA		J	Resistor 0 1/16W Metal Oxide
R4005	VRS-CZ1JF000JY	AA		J	Resistor 0 1/16W Metal Oxide
R4007	VRS-CZ1JF201FY	AA		J	Resistor 200 1/16W Metal Oxide
R4008	VRS-CZ1JF000JY	AA		J	Resistor 0 1/16W Metal Oxide
R4009	VRS-CZ1JF000JY	AA		J	Resistor 0 1/16W Metal Oxide
R4010	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R4012	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R4013	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R4014	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R4016	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R4017	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R4018	VRS-CZ1JF000JY	AA		J	Resistor 0 1/16W Metal Oxide
R4019	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R4020	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R4022	VRS-CZ1JF151JY	AA		J	Resistor 150 1/16W Metal Oxide
R4023	VRS-CZ1JF151JY	AA		J	Resistor 150 1/16W Metal Oxide
R4024	VRS-CZ1JF151JY	AA		J	Resistor 150 1/16W Metal Oxide
R4025	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R4026	VRS-CZ1JF151JY	AA		J	Resistor 150 1/16W Metal Oxide
R4027	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R4028	VRS-CZ1JF561JY	AA		J	Resistor 560 1/16W Metal Oxide
R4029	VRS-CZ1JF000JY	AA		J	Resistor 0 1/16W Metal Oxide
R4030	VRS-CZ1JF391JY	AA		J	Resistor 390 1/16W Metal Oxide
R4031	VRS-CZ1JF392JY	AA		J	Resistor 3.9k 1/16W Metal Oxide
R4032	VRK-SB1FF103JY	AA		J	Resistor 10k 1/32W Metal Composition
R4033	VRS-CZ1JF561JY	AA		J	Resistor 560 1/16W Metal Oxide
R4042	VRS-CZ1JF471JY	AA		J	Resistor 470 1/16W Metal Oxide
R4043	VRS-CZ1JF392JY	AA		J	Resistor 3.9k 1/16W Metal Oxide
R4044	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R4045	VRS-CZ1JF471JY	AA		J	Resistor 470 1/16W Metal Oxide
R4046	VRS-CZ1JF101JY	AA		J	Resistor 100 1/16W Metal Oxide
R4047	VRS-CZ1JF101JY	AA		J	Resistor 100 1/16W Metal Oxide
R4048	VRS-CZ1JF561JY	AA		J	Resistor 560 1/16W Metal Oxide
R4049	VRK-SA1JF220JY			J	Resistor 22 1/16W Metal Composition
R4201	VRK-SB1FF820JY			J	Resistor 82 1/32W Metal Composition
R4202	VRK-SB1FF820JY			J	Resistor 82 1/32W Metal Composition
R4203	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R4204	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R4205	VRK-SB1FF820JY			J	Resistor 82 1/32W Metal Composition
R4206	VRK-SB1FF820JY			J	Resistor 82 1/32W Metal Composition
R4207	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R4208	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R4209	VRS-CZ1JF470JY	AA		J	Resistor 47 1/16W Metal Oxide
R4210	VRS-CZ1JF470JY	AA		J	Resistor 47 1/16W Metal Oxide
R4211	VRS-CZ1JF470JY	AA		J	Resistor 47 1/16W Metal Oxide
R4212	VRS-CZ1JF470JY	AA		J	Resistor 47 1/16W Metal Oxide
R4213	VRS-CZ1JF470JY	AA		J	Resistor 47 1/16W Metal Oxide
R4214	VRS-CZ1JF470JY	AA		J	Resistor 47 1/16W Metal Oxide
R4215	VRS-CZ1JF470JY	AA		J	Resistor 47 1/16W Metal Oxide
R4216	VRS-CZ1JF470JY	AA		J	Resistor 47 1/16W Metal Oxide
R4217	VRS-CZ1JF470JY	AA		J	Resistor 47 1/16W Metal Oxide
R4218	VRS-CZ1JF000JY	AA		J	Resistor 0 1/16W Metal Oxide
R4219	VRS-CZ1JF470JY	AA		J	Resistor 47 1/16W Metal Oxide
R4220	VRS-CZ1JF470JY	AA		J	Resistor 47 1/16W Metal Oxide
R4231	VRS-CZ1JF101JY	AA		J	Resistor 100 1/16W Metal Oxide
R4240	VRS-CZ1JF102FY	AA		J	Resistor 1k 1/16W Metal Oxide
R4241	VRS-CZ1JF102FY	AA		J	Resistor 1k 1/16W Metal Oxide
R4242	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R4243	VRS-CZ1JF102FY	AA		J	Resistor 1k 1/16W Metal Oxide
R4244	VRS-CZ1JF102FY	AA		J	Resistor 1k 1/16W Metal Oxide
R4251	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R4252	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R4253	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R4254	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R4255	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R4256	VRS-CZ1JF470JY	AA		J	Resistor 47 1/16W Metal Oxide
R4257	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R4258	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R4259	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R4260	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R4261	VRS-CZ1JF470JY	AA		J	Resistor 47 1/16W Metal Oxide
R4262	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R4263	VRS-CZ1JF472JY	AA		J	Resistor 4.7k 1/16W Metal Oxide
R4264	VRS-CZ1JF470JY	AA		J	Resistor 47 1/16W Metal Oxide
R4265	VRS-CZ1JF000JY	AA		J	Resistor 0 1/16W Metal Oxide
R4266	VRS-CZ1JF000JY	AA		J	Resistor 0 1/16W Metal Oxide
R4268	VRK-SA1JF472JY	AA		J	Resistor 4.7k 1/16W Metal Composition
R4269	VRK-SA1JF220JY			J	Resistor 22 1/16W Metal Composition
R4272	VRS-CZ1JF470JY	AA		J	Resistor 47 1/16W Metal Oxide
R4401	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R4402	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition

[4] DUNTKE449FM02 (MAIN Unit)

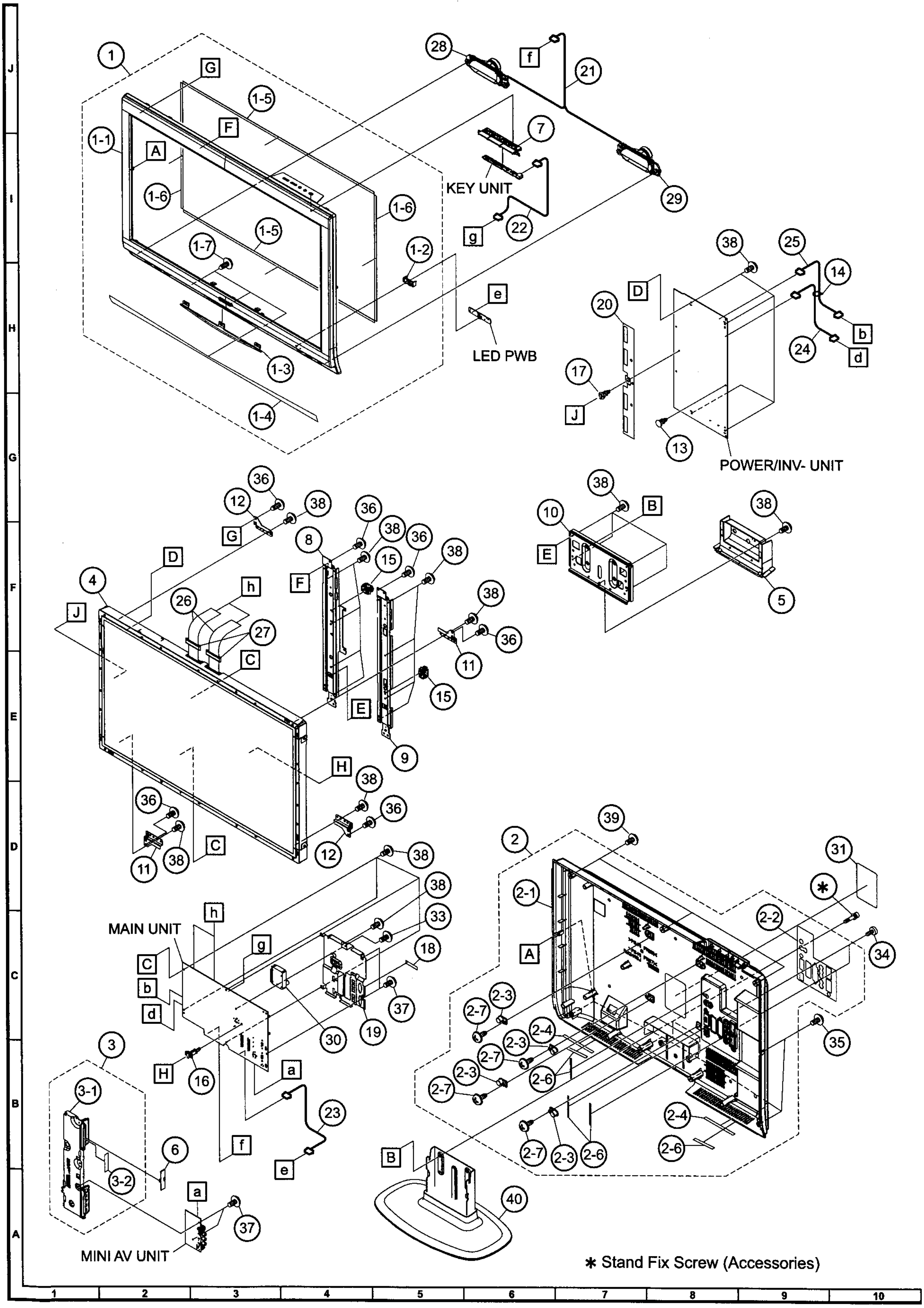
NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
R4403	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R4404	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R4405	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R4406	VRS-CZ1JF101JY	AA		J	Resistor 100 1/16W Metal Oxide
R4407	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R4408	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R4409	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R4410	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R4411	VRK-SB1FF101JY	AA		J	Resistor 100 1/32W Metal Composition
R4412	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R4413	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R4414	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R4415	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R4416	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R4417	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R4418	VRS-CZ1JF470JY	AA		J	Resistor 47 1/16W Metal Oxide
R4419	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R4420	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R4421	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R4422	VRK-SB1FF101JY	AA		J	Resistor 100 1/32W Metal Composition
R4423	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R4424	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R4425	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R4426	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R4427	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R4428	VRK-SB1FF101JY	AA		J	Resistor 100 1/32W Metal Composition
R4429	VRK-SB1FF470JY	AA		J	Resistor 47 1/32W Metal Composition
R4430	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R4431	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R4432	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R4433	VRS-CZ1JF470JY	AA		J	Resistor 47 1/16W Metal Oxide
R4434	VRS-CZ1JF470JY	AA		J	Resistor 47 1/16W Metal Oxide
R4435	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R4436	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R4437	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R4438	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R4441	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R4443	VRS-CZ1JF333JY	AA		J	Resistor 33k 1/16W Metal Oxide
R4445	VRS-CZ1JF333JY	AA		J	Resistor 33k 1/16W Metal Oxide
R4446	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R4447	VRS-CZ1JF223JY	AA		J	Resistor 22k 1/16W Metal Oxide
R4448	VRS-CZ1JF470JY	AA		J	Resistor 47 1/16W Metal Oxide
R4452	VRS-CZ1JF470JY	AA		J	Resistor 47 1/16W Metal Oxide
R4453	VRS-CZ1JF101JY	AA		J	Resistor 100 1/16W Metal Oxide
R4454	VRS-CZ1JF470JY	AA		J	Resistor 47 1/16W Metal Oxide
R4455	VRS-CZ1JF470JY	AA		J	Resistor 47 1/16W Metal Oxide
R4458	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R4459	VRS-CZ1JF000JY	AA		J	Resistor 0 1/16W Metal Oxide
R4561	VRS-CZ1JF470JY	AA		J	Resistor 47 1/16W Metal Oxide
R8102	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R8104	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R8114	VRK-SB1FF220JY	AA		J	Resistor 22 1/32W Metal Composition
R8115	VRS-CY1JF105FY	AA		J	Resistor 1M 1/16W Metal Oxide
R8118	VRK-SB1FF222JY	AA		J	Resistor 2.2k 1/32W Metal Composition
R8121	VRS-CY1JF331FY	AA		J	Resistor 330 1/16W Metal Oxide
R8129	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R8130	VRS-CZ1JF101JY	AA		J	Resistor 100 1/16W Metal Oxide
R8131	VRS-CZ1JF471JY	AA		J	Resistor 470 1/16W Metal Oxide
R8132	VRS-CZ1JF471JY	AA		J	Resistor 470 1/16W Metal Oxide
R8133	VRS-CZ1JF471JY	AA		J	Resistor 470 1/16W Metal Oxide
R8134	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R8135	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R8136	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R8137	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R8141	VRS-CZ1JF000JY	AA		J	Resistor 0 1/16W Metal Oxide
R8142	VRS-CZ1JF101DY	AA		J	Resistor 100 1/16W Metal Oxide
R8143	VRS-CZ1JF101DY	AA		J	Resistor 100 1/16W Metal Oxide
R8145	VRS-CZ1JF101DY	AA		J	Resistor 100 1/16W Metal Oxide
R8146	VRS-CZ1JF101DY	AA		J	Resistor 100 1/16W Metal Oxide
R8147	VRS-CZ1JF101DY	AA		J	Resistor 100 1/16W Metal Oxide
R8148	VRK-SB1FF101JY	AA		J	Resistor 100 1/32W Metal Composition
R8149	VRS-CZ1JF101DY	AA		J	Resistor 100 1/16W Metal Oxide
R8202	VRS-CZ1JF000JY	AA		J	Resistor 0 1/16W Metal Oxide
R8203	VRS-CZ1JF000JY	AA		J	Resistor 0 1/16W Metal Oxide
R8204	VRS-CZ1JF470JY	AA		J	Resistor 47 1/16W Metal Oxide
R8208	VRS-CZ1JF470JY	AA		J	Resistor 47 1/16W Metal Oxide
R8209	VRK-SA1JF220JY			J	Resistor 22 1/16W Metal Composition
R8210	VRS-CZ1JF752DY	AA		J	Resistor 7.5k 1/16W Metal Oxide
R8211	VRS-CZ1JF000JY	AA		J	Resistor 0 1/16W Metal Oxide
R8212	VRS-CZ1JF470JY	AA		J	Resistor 47 1/16W Metal Oxide
R8213	VRS-CZ1JF243DY	AA		J	Resistor 24k 1/16W Metal Oxide
R8215	VRS-CZ1JF243DY	AA		J	Resistor 24k 1/16W Metal Oxide
R8217	VRS-CZ1JF101JY	AA		J	Resistor 100 1/16W Metal Oxide
R8219	VRS-CZ1JF470JY	AA		J	Resistor 47 1/16W Metal Oxide
R8221	VRS-CZ1JF470JY	AA		J	Resistor 47 1/16W Metal Oxide

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
[4] DUNTKE449FM02 (MAIN Unit)					
R8226	VRS-CZ1JF470JY	AA		J	Resistor 47 1/16W Metal Oxide
R8227	VRS-CZ1JF000JY	AA		J	Resistor 0 1/16W Metal Oxide
R8228	VRS-CZ1JF470JY	AA		J	Resistor 47 1/16W Metal Oxide
R8231	VRS-CZ1JF000JY	AA		J	Resistor 0 1/16W Metal Oxide
R8233	VRS-CZ1JF470JY	AA		J	Resistor 47 1/16W Metal Oxide
R8234	VRS-CZ1JF000JY	AA		J	Resistor 0 1/16W Metal Oxide
R8402	VRS-CZ1JF202DY	AA		J	Resistor 2k 1/16W Metal Oxide
R8403	VRS-CZ1JF332DY	AA		J	Resistor 3.3k 1/16W Metal Oxide
R8404	VRS-CZ1JF512DY	AA		J	Resistor 5.1k 1/16W Metal Oxide
R8406	VRS-CZ1JF513DY	AA		J	Resistor 51k 1/16W Metal Oxide
R8408	VRS-TW2HPR33JY	AA		J	Resistor 0.33 1/2W Metal Oxide
R8409	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R8410	VRS-CZ1JF153DY	AA		J	Resistor 15k 1/16W Metal Oxide
R8411	VRS-CZ1JF153DY	AA		J	Resistor 15k 1/16W Metal Oxide
R8412	VRS-CZ1JF203DY	AA		J	Resistor 20k 1/16W Metal Oxide
R8413	VRS-CZ1JF104JY	AA		J	Resistor 100k 1/16W Metal Oxide
R8414	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R8415	VRS-CZ1JF103JY	AA		J	Resistor 10k 1/16W Metal Oxide
R8416	VRS-CZ1JF332JY	AA		J	Resistor 3.3k 1/16W Metal Oxide
R8417	VRS-CZ1JF101JY	AA		J	Resistor 100 1/16W Metal Oxide
R8418	VRS-CZ1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R8420	VRS-CZ1JF913DY	AA		J	Resistor 91k 1/16W Metal Oxide
R8421	VRS-CZ1JF133DY	AA		J	Resistor 13k 1/16W Metal Oxide
R8423	VRS-CZ1JF332DY	AA		J	Resistor 3.3k 1/16W Metal Oxide
R8427	VRS-CZ1JF683FY	AA		J	Resistor 68k 1/16W Metal Oxide
R8428	VRS-CZ1JF113FY	AA		J	Resistor 11k 1/16W Metal Oxide
R8429	VRS-CZ1JF1R0JY	AA		J	Resistor 1 1/16W Metal Oxide
R8430	VRS-CZ1JF511DY	AA		J	Resistor 510 1/16W Metal Oxide
R8431	VRS-CZ1JF513DY	AA		J	Resistor 51k 1/16W Metal Oxide
R8432	VRS-CZ1JF1R0JY	AA		J	Resistor 1 1/16W Metal Oxide
R8434	VRS-CZ1JF000JY	AA		J	Resistor 0 1/16W Metal Oxide
R8435	VRS-CZ1JF102DY	AA		J	Resistor 1k 1/16W Metal Oxide
R8436	VRS-CY1JF562JY	AA		J	Resistor 5.6k 1/16W Metal Oxide
R8437	VRS-CZ1JF391DY	AA		J	Resistor 390 1/16W Metal Oxide
R8438	VRS-CZ1JF203DY	AA		J	Resistor 20k 1/16W Metal Oxide
R8439	VRS-CZ1JF303DY	AA		J	Resistor 30k 1/16W Metal Oxide
R8440	VRS-CZ1JF753DY	AA		J	Resistor 75k 1/16W Metal Oxide
R8441	VRS-CZ1JF242DY	AA		J	Resistor 2.4k 1/16W Metal Oxide
R8442	VRS-CZ1JF204DY	AA		J	Resistor 200k 1/16W Metal Oxide
R8443	VRS-CZ1JF000JY	AA		J	Resistor 0 1/16W Metal Oxide
R8444	VRS-CZ1JF183DY	AA		J	Resistor 18k 1/16W Metal Oxide
R8445	VRS-CZ1JF000JY	AA		J	Resistor 0 1/16W Metal Oxide
R8446	VRS-CZ1JF102DY	AA		J	Resistor 1k 1/16W Metal Oxide
R8448	VRS-CZ1JF133DY	AA		J	Resistor 13k 1/16W Metal Oxide
R8450	VRS-CZ1JF753DY	AA		J	Resistor 75k 1/16W Metal Oxide
R8451	VRS-CZ1JF104JY	AA		J	Resistor 100k 1/16W Metal Oxide
R8452	VRS-CZ1JF390DY	AA		J	Resistor 39 1/16W Metal Oxide
R8453	VRS-CZ1JF183DY	AA		J	Resistor 18k 1/16W Metal Oxide
R8454	VRS-CZ1JF334DY	AA		J	Resistor 330k 1/16W Metal Oxide
R8455	VRS-CZ1JF153DY	AA		J	Resistor 15k 1/16W Metal Oxide
R8456	VRS-CZ1JF102FY	AA		J	Resistor 1k 1/16W Metal Oxide
R8457	VRS-TQ2BD511JY	AA		J	Resistor 510 1/8W Metal Oxide
R8458	VRS-TQ2BD511JY	AA		J	Resistor 510 1/8W Metal Oxide
R8459	VRS-CZ1JF513DY	AA		J	Resistor 51k 1/16W Metal Oxide
R8460	VRS-CZ1JF203DY	AA		J	Resistor 20k 1/16W Metal Oxide
R8461	VRS-TQ2BD511JY	AA		J	Resistor 510 1/8W Metal Oxide
R8479	VRS-CZ1JF000JY	AA		J	Resistor 0 1/16W Metal Oxide
R8485	VRS-CZ1JF000JY	AA		J	Resistor 0 1/16W Metal Oxide
R8491	VRS-CZ1JF113DY	AA		J	Resistor 11k 1/16W Metal Oxide
R8492	VRS-CZ1JF102DY	AA		J	Resistor 1k 1/16W Metal Oxide
R8493	VRS-CZ1JF682DY	AB		J	Resistor 6.8k 1/16W Metal Oxide
R8494	VRS-CZ1JF204DY	AA		J	Resistor 200k 1/16W Metal Oxide
R8495	VRS-CZ1JF183DY	AA		J	Resistor 18k 1/16W Metal Oxide
R8496	VRS-CZ1JF683DY	AA		J	Resistor 68k 1/16W Metal Oxide
R8497	VRS-CZ1JF393DY	AA		J	Resistor 39k 1/16W Metal Oxide
R8499	VRS-TV1JD000JY	AA		J	Resistor 0 1/10W Metal Oxide
R8500	VRS-CY1JF000JY	AA		J	Resistor 0 1/16W Metal Oxide
R8502	VRS-CZ1JF102FY	AA		J	Resistor 1k 1/16W Metal Oxide
R8504	VRS-TW2HF3R3JY	AA		J	Resistor 3.3 1/2W Metal Oxide
R8505	VRS-TV1JD3R3JY	AA		J	Resistor 3.3 1/16W Metal Oxide
R8506	VRS-TV1JD101JY	AA		J	Resistor 100 1/10W Metal Oxide
R8507	VRS-CZ1JF105JY	AA		J	Resistor 1M 1/16W Metal Oxide
R8508	VRS-CZ1JF474JY	AA		J	Resistor 470k 1/16W Metal Oxide
SC1101	QSOCZA161WJZZ	AG		J	Socket 21Pin (INPUT 2)
SC1102	QSOCZA161WJZZ	AG		J	Socket 21Pin (INPUT 2)
SC1201	QSOCNA770WJZZ	AG	N	J	Socket 17Pin (PC-IN(BLACK))
SC1501	QSOCNA769WJZZ	AG	N	J	Socket 11Pin (RS232C)
SC1901	QSOCZA171WJZZY	AF		J	Socket 23Pin
SC1921	QSOCZA171WJZZY	AF		J	Socket 23Pin
SC4401	QSOCJA002WJZZQ		N	J	Socket 68Pin
SC8201	QCNCW2367WJZZY	AG		J	Socket 80Pin
SC8202	QCNCW2367WJZZY	AG		J	Socket 80Pin
TH2301	VHHM1103J03-1Y	AC		J	Thermistor
⚠ TU201	RTUDAA019WJQZ	BA	N	P	Tuner
X201	RCRSCA039WJZZY	AG		J	Crystal

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
[4] DUNTKE449FM02 (MAIN Unit)					
X1951	RCRSCA146WJZZY	AE		J	Crystal 28.322MHz
X2301	RCRMCA011WJZZY	AD		J	Crystal
X3051	RCRSC0012CEZZY	AH		J	Crystal 20.25MHz
X4001	RCRSCA039WJZZY	AG		J	Crystal
N	NSFTZA243WJFN			J	Shaft, x4
N	PRDARA577WJFW		N	J	Heat Sink
N	PSPAZB311WJKZ	AE		J	Spacer
N	XBPSN20P10JS0	AD		J	Screw, x2
[5] DUNTKE457FM02 (R/C, LED Unit)					
C102	VCKYTV1CF225ZY	AB		J	Capacitor 2.2 16V Ceramic
C107	VCEASY1CN107MY	AC		J	Capacitor 100 16V Electrolytic
D101	RH-EXA092WJZZY	AB		J	Zener Diode UDZSNPTE-1712B
D103	RH-PX0421CEZZY	AD		J	Photo Diode CL-165HR/YG-D-T
P101	QPLGNA339WJZZY	AD		J	Plug 5pin (D)
R101	VRS-CY1JF101JY	AA		J	Resistor 100 1/16W Metal Oxide
R108	VRS-CY1JF151JY	AA		J	Resistor 0 1/16W Metal Oxide
R109	VRS-CY1JF821JY	AA		J	Resistor 820 1/16W Metal Oxide
RMC101	RRMCUA053WJZZ	AE		J	Remote Control
SLD101	PSLDPA076WJFW	AD		J	Shield Case
[6] DUNTKE491FM01(MINI-AV Unit)					
C1001	VCKYCY1HB102KY	AA		J	Capacitor 1000p 50V Ceramic
C1002	VCKYCY1HB102KY	AA		J	Capacitor 1000p 50V Ceramic
C1003	VCKYCY1HB223KY	AA		J	Capacitor 0.022 50V Ceramic
C1004	VCKYCY1HB223KY	AA		J	Capacitor 0.022 50V Ceramic
C1020	VCKYCY1HB102KY	AA		J	Capacitor 1000p 50V Ceramic
C1046	VCCCCY1HH101JY	AA		J	Capacitor 100p 50V Ceramic
C1047	VCCCCY1HH101JY	AA		J	Capacitor 100p 50V Ceramic
C1049	VCCCCY1HH101JY	AA		J	Capacitor 100p 50V Ceramic
D1001	RH-EXA541WJZZY	AB		J	Zener Diode EXA541WJ
D1002	RH-EXA541WJZZY	AB		J	Zener Diode EXA541WJ
D1005	RH-EXA541WJZZY	AB		J	Zener Diode EXA541WJ
FB1001	RBLN-0077TAZZY	AB		J	Balun BLN-0077TA
FB1002	RBLN-0077TAZZY	AB		J	Balun BLN-0077TA
FL1001	RFiLN0080CEZZY	AD		J	Filter FILN0080CE
FL1002	RFiLN0080CEZZY	AD		J	Filter FILN0080CE
FL1003	RFiLN0080CEZZY	AD		J	Filter FILN0080CE
J1001	QSOCD0456CEZZ	AE		J	Socket
J1002	QJAKGA079WJZZ	AD		J	Jack
J1003	QJAKJ0047CEZZ	AD		J	Jack
LUG1001	QLUGHA002WJZZ	AB		J	Lug
LUG1002	QLUGHA002WJZZ	AB		J	Lug
R1001	VRS-TQ2EF750JY	AA		J	Resistor 75 1/4W Metal Oxide
R1002	VRS-TQ2EF750JY	AA		J	Resistor 75 1/4W Metal Oxide
R1003	VRS-CY1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R1004	VRS-TQ2EF101JY	AA		J	Resistor 100 1/4W Metal Oxide
R1005	VRS-TQ2EF101JY	AA		J	Resistor 100 1/4W Metal Oxide
R1007	VRS-CY1JF104JY	AA		J	Resistor 100k 1/16W Metal Oxide
R1008	VRS-CY1JF104JY	AA		J	Resistor 100k 1/16W Metal Oxide
R1009	VRS-TQ2EF750JY	AA		J	Resistor 75 1/4W Metal Oxide
R1024	VRS-CY1JF104JY	AA		J	Resistor 100k 1/16W Metal Oxide
R1025	VRS-CY1JF104JY	AA		J	Resistor 100k 1/16W Metal Oxide
R1041	VRS-CY1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
R1042	VRS-CY1JF102JY	AA		J	Resistor 1k 1/16W Metal Oxide
SC1001	QSOCZ1538CEZZ	AE		J	Socket

LC32D44E/S/RU-BK/GY (1st Eddition)

[7] CABINET PARTS



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MINI AV UNIT
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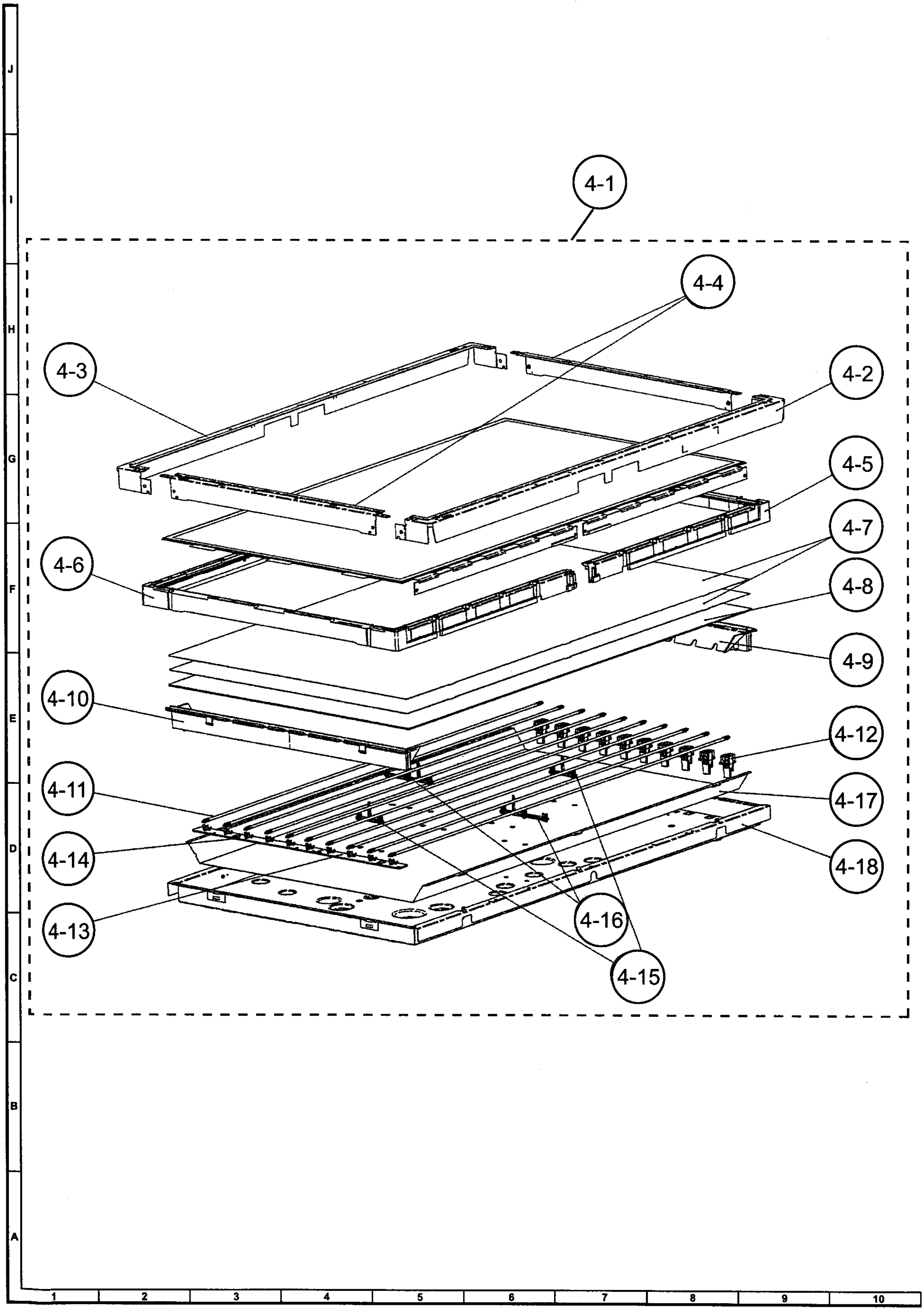
✱ Stand Fix Screw (Accessories)

[7] CABINET PARTS

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
1	CCABAB985WJ01	BG	N	P	Front Cabinet Ass'y (LC-32D44E(BK))
1	CCABAB985WJ02	BM	N	P	Front Cabinet Ass'y (LC-32D44E(GY))
1-1	Not Available	–	N	–	Front Cabinet
1-2	Not Available	–	N	–	LED Cover
1-3	Not Available	–	N	–	Center Dec.
1-4	Not Available	–	N	–	SP Sheet
1-5	Not Available	–		–	Mask Himelon, x2 (Top/Bottom)
1-6	Not Available	–		–	Mask Himelon, x2 (Side)
1-7	XEBS930P08000	AA		J	Screw, x3 (Center Dec.)
2	CCABBB241WJ01	BE	N	P	Rear Cabinet Ass'y
2-1	Not Available	–	N	–	Rear Cabinet
2-2	Not Available	–	N	–	Terminal Label
2-3	Not Available	–	N	–	VESA Holder, x4
2-4	Not Available	–	N	–	Molt Plane, x2
2-6	Not Available	–	N	–	Himelon, x5
2-7	XEBS930P08000	AA		J	Screw, x4 (VESA Holder)
3	CCOVAC614WJ01	AM	N	P	MINI AV Cover Ass'y
3-1	Not Available	–	N	–	MINI AV Cover
3-2	Not Available	–	N	–	Himelon
4	R1LK315T3GW30Y		N	J	32" LCD Panel Module
5	GCOVAC612WJ1A	AH	N	P	Bottom Cover
6	GCOVAC637WJ1A	AD	N	P	PC Card Cover
7	JBTN-A718WJ1A	AE	N	P	Control Button
8	LANGKB350WJFW	AS	N	P	Center Angle (R)
9	LANGKB351WJFW	AR	N	P	Center Angle (L)
10	LANGKB358WJFW	AW	N	P	Bottom Angle
11	LANGKB359WJFW	AD	N	P	LCD Angle A, x2
12	LANGKB397WJFW	AD	N	P	LCD Angle B, x2
13	LHLDF1057CEZZ	AB		J	Card Spacer
14	LHLDW1033CE00	AA		J	Wire Holder
15	LHLDWA143WJKZ	AC		J	Wire Holder, x2 (Cable)
16	LHLDZA933WJKZ	AB		J	MAIN PWB Hplder
17	LHLDZA934WJKZ	AB	N	J	POWER PWB Holder
18	PSLDMA403WJZZ	AE		J	Spacer (10*45H), x2
19	PSLDMB358WJFW	AK	N	P	Shield
20	PZETKA383WJKZ	AG	N	P	Barrier Sheet
21	QCNW-G658WJQZ	AG		P	Connecting Cord (SP)
22	QCNW-G660WJQZ	AE	N	P	Connecting Cord (KM)
23	QCNW-G662WJQZ	AF	N	P	Connecting Cord (RA)
24	QCNW-G664WJQZ	AK	N	P	Connecting Cord (LA)
25	QCNW-G666WJQZ	AG	N	P	Connecting Cord (LB)
26	QCNW-H025WJQZ	AM		J	LCD FFC, x2
27	RCORFA064WJZZ	AF		P	Core, x2 (LCD FFC)
28	RSP-ZA321WJZZ	AT	N	J	Speaker (L)
29	RSP-ZA322WJZZ	AT	N	J	Speaker (R)
⚠ 30	RTUDAA019WJQZ	BA	N	P	Tuner
31	TLABNC117WJZZ	AB		P	Model Label
33	XBBS730P04000	AA		J	Screw (SHIELD)
34	XEBS930P08000	AA		J	Screw, x2 (TERMINALI)
35	XEBS940P16000	AB		J	Screw, x6 (CAB-B FIX)
36	XEBSN40P10000	AB		J	Screw, x6 (LCD-ANG FIX)
37	XHPS730P16WS0	AB	N	J	Screw, x4 (MAIN ETC)
38	XHPS830P06WS0	AA	N	J	Screw,x26 (PWB ETC)
39	XHPS830P10WS0	AB	N	J	Screw,x3 (CAB-B FIX)
40	CDAi-A441WJ02	BF	N	J	Stand Ass'y (LC-32D44E(BK))
40	CDAi-A441WJ05	BG	N	P	Stand Ass'y (LC-32D44E(GY))

[8] LCD MODULE ASSEMBLY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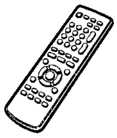
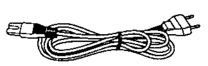
NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
[8] LCD MODULE ASSEMBLY					
4-1	R1LK315T3GW30Y		N	J	LCD Module Ass'y
4-2	CANGKB549WJ01	AS	N	J	Bezel Ass'y (Top)
4-3	CANGKB549WJ02	AR	N	J	Bezel Ass'y (Bottom)
4-4	CANGKB548WJ01	AK	N	J	Bezel Ass'y (L, R), x2
4-5	CHLDZB061WJ01	AT	N	J	Panel Chassis Ass'y (Left)
4-6	CHLDZB062WJ01	AT	N	J	Panel Chassis Ass'y (Right)
4-7	PSHEPA667WJZZ	AU	N	J	Lens Sheet, x2
4-8	PSLDK3003TPZZ	AY	N	J	Diffusion Panel
4-9	LHLDZA919WJKZ	AL	N	J	Lamp Holder-L
4-10	LHLDZA918WJKZ	AL	N	J	Lamp Holder-R
4-11	RLMPLA029WJN1	AR	N	J	Lamp Unit, x10
4-12	QSOCFA003WJZZ	AD	N	J	Lamp Socket, x10
4-13	RUNTK3923TPZZ	AN	N	J	GND PWB (Top)
4-14	RUNTK3924TPZZ	AP	N	J	GND PWB (Bottom)
4-15	LHLDZA924WJKZ	AB	N	J	Lamp Clip A, x2
4-16	LHLDZA925WJKZ	AC	N	J	Lamp Clip B, x2
4-17	PMiR-A166WJZZ	AU	N	J	Reflection Sheet
4-18	CCHSMA422WJ01		N	J	BL Chassis Ass'y
-	LX-EZA028WJF9	AB		J	Screw, x12 (for Bezel, Panel Chassis)
-	LX-HZA039WJF7	AB	N	J	Screw, x10 (for Bezel, Panel Chassis, BL Chassis)

[9] SUPPLIED ACCESSORIES

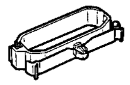
X3
Remote control unit



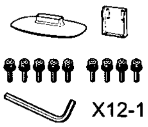
X2
AC cord



X1
Cable clamp



Stand unit
X12



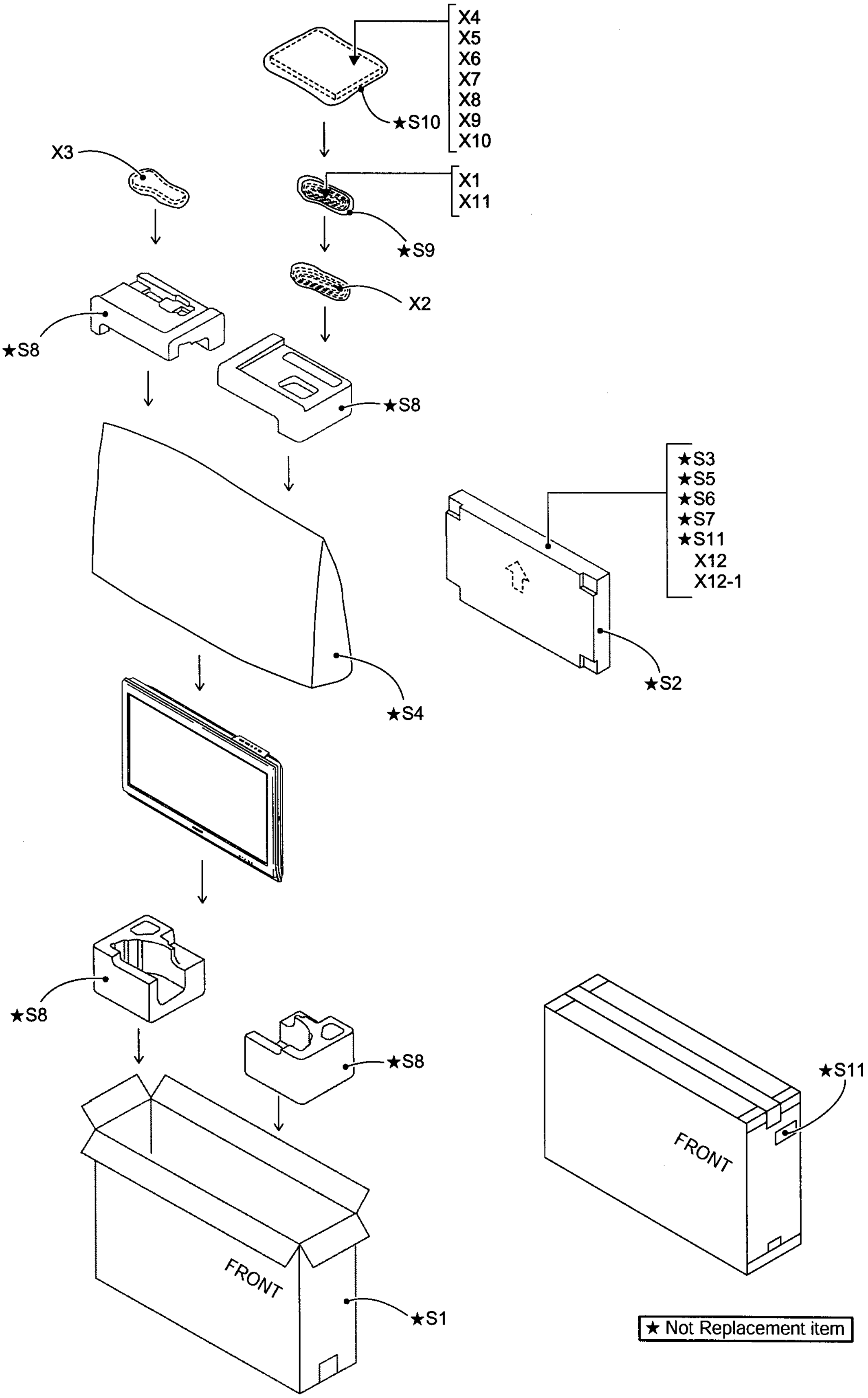
X11
- "AA" size battery

X4 X5 X6 X7
- Operation manual

X8 AQUOS Care Plan (U.K and Ireland)
X9 Warranty Card (U.K and Ireland)
X10 Warranty Card (Russian)

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
[9] SUPPLIED ACCESSORIES					
X1	LHLDWA173WJKZ	AE		J	Cable Clamp
⚠ X2	QACCKA007WJPZ	AK		J	AC Cord 2Pin (for Europe without U.K. and Ireland.
⚠ X2	QACCBA054WJPZ	AQ		P	AC Cord 3Pin (for U.K. and Ireland)
X3	RRMCGA591WJSA	AQ		P	Remote Control unit (LC-32D44E(BK))
X3	RRMCGA591WJSB	AQ		P	Remote Control unit (LC-32D44E(GY))
X4	TiNS-D477WJZZ	AM	N	P	Operation Manual (ENGLISH...) (LC-32D44E(BK)/(GY))
X5	TiNS-D478WJZZ	AM	N	P	Operation Manual(SWEDISH...) (LC-32D44E(BK)/(GY))
X6	TiNS-D479WJZZ	AP	N	P	Operation Manual(POLISH...) (LC-32D44E(BK)/(GY))
X7	TiNS-D480WJZZ	AF	N	P	Operation Manual(RUSSIAN) (LC-32D44E(BK)/(GY))
X8	TGAN-A801WJZZ	AB		P	AQUOS Care Plan (U.K and Ireland)
X9	TGAN-A802WJZZ	AC		P	Warranty Card (U.K and Ireland)
X10	TGAN-A077WJZZ	AE		J	Warranty Card (Russian)
X11	Not Available	–		–	"AA" size Battery
X12	CDAi-A441WJ02	BF	N	J	Stand Ass'y (LC-32D44E(BK))
X12	CDAi-A441WJ05	BG	N	P	Stand Ass'y (LC-32D44E(GY))
X12-1	Not Available	–	N	–	Tool for Stand

[10] PACKING PARTS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★S11
FRONT
FRONT
★S1

★ Not Replacement item

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
[10] PACKING PARTS					
S1	SPAKCD948WJZZ	–	N	–	Packing Case
S2	SPAKFB417WJZZ	–	N	–	Stand Case
S3	SPAKFB418WJZZ	–	N	–	Stand Pad (LC-32D44E(BK))
S3	SPAKFB550WJZZ	–	N	–	Stand Pad (LC-32D44E(GY))
S4	SPAKPA382WJZZ	–	N	–	Wrapping Paper
S5	SPAKPB053WJZZ	–	N	–	Mirror Mat (Stand Support)
S6	SPAKPB054WJZZ	–	N	–	Mirror Mat (Stand Bsse)
S7	SPAKAA373WJZZ	–	N	–	Cover Sheet
S8	SPAKXB805WJZZ	–	N	–	Buffer material (Top/Bottom)
S9	SSAKAA009WJZZ	–		–	Polyethylene bag
S10	SSAKAA111WJZZ	–	N	–	Polyethylene bag
S11	TLABM5584BMZZ	–		–	Case No. Label
[11] SERVICE JIGS					
N	QCNW-G440WJQZ	AP	N	J	Connecting Cord (4-5pins L=1000mm), Main to Key
N	QCNW-H184WJQZ	AX	N	J	Connecting Cord, MAIN-R/C,LED
N	QCNW-H185WJQZ	AV	N	J	Connecting Cord, MAIN-POWER
N	QCNW-H186WJQZ	AQ	N	J	Connecting Cord, MAIN-POWER
N	QCNW-H187WJQZ	AP	N	J	Connecting Cord, MAIN-SPEAKER
N	QCNW-C222WJQZ	AW		J	Connecting Cord (80pin FFC L=1000mm), x2 MAIN t